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ABSTRACT

This unit contains a number of learning activities which can be incorporated into junior-high environmental education classes. Objectives are to make students aware of local environmental problems and clarify their personal values about environmental issues. Along with general kinds of land-use problems and historical overviews, the unit focuses specifically on four major land-use issues in Pinellas County, Florida, including beach development and natural disasters; land-use and planned zoning; transportation; and water supplies, distribution, and wastes. Each unit of the guide contains appropriate teacher information, such as materials needed, special notes to the teacher, activities, objectives, skills, generalizations, and guidelines. Although focused on Florida, the unit serves as a good model that can be easily adapted in other regions. Teachers can substitute maps, graphs, and other kinds of local information using the Pinellas County model as an example. (JR)

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AN INTERDISCIPLINARY INSTRUCTIONAL UNIT ON LAND USE IN PINELLAS COUNTY

Cover Page by CHRIS STILL

Social Studies Project #877

FEB 23 1976

AN INTERDISCIPLINARY INSTRUCTIONAL UNIT ON LAND-USE IN PINELLAS COUNTY , FLORIDA

DEVELOPED BY TEACHERS FOR MIDDLE AND JUNIOR HIGH SCHOOL STUDENTS

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PREFACE

The city stands as one of humankind's most intriguing inventions. Though certainly not ancient in the time scale of human evolution, the idea of the city has come to be regarded as our highest development.

It is obvious that humankind is now at a crossroads in our development. Our technology has been developed to the extent that not only do we produce great wealth and great technical achievements-the greatest the world has ever known-but we have generated forces and conditions that threaten to alter the very environment in which we live. The crossroads at which humankind stands can lead us, paradoxically, to an amelioration of the environment with consequent enhancement of human life or to the degradation of the environment with the resulting debasement of human life.

The knowledge and understanding necessary to predict the consequences of humankind's activities are far more available than they were even a decade ago, and with the accelerating generation of all knowledge, the information necessary either to despoil or to enhance the urban environment will also be generated in an accelerated fashion.

By harnessing its great vitality the city can be transformed into the most favorable environment for humankind.

But beyond the ideals for which we aspire, the reality of land-use and the quality of daily life in urban areas are matters of frustration. Somehow we have lost our grip on the process of growth and development, while forgetting to stop and to reflect on where we are and where we are going.

This instructional unit is an effort to provide the time and the materials for serious reflection by middle/junior high school students and their teachers. We need to reflect. The unit asks each of us to look at what is happening, to clarify our values and lifestyle aspirations, and to make some commitments about how we shall all live together. This involves planning. As The American Institute of Planners reminds us:

> "Planning is the process of making rational decisions about future actions directed toward the attainment of predetermined community goals. Rational decisions as used in this definition are those actions which will result in the attainment of the desired goals at minimum cost. Planning is the activity by which individuals and groups attempt to determine the future of their community and must be based on a full understanding of the continuing life of the community as a unit in the physical, social and economic world. The planning process provides a basis for making policy decisions for directing and guiding the community's future development."

Objectives: General

1. To promote the development of an understanding and appreciation by each learner of his or her self-worth through a) environmental awareness activities, b) decision-making and reflective inquiry activities, and c) environmental action-participation activities.

2. To examine one's place in the natural world and socio-political system and the power that man possesses to protect, preserve, and conserve or to pollute and destroy both natural and socio-political processes.

3. To arouse, stimulate, and promote personal awareness and sensitivities regarding the interdependence of all life in the natural world and the dependence of man on that natural world and his community of fellow human beings.

4. To foster empathy for, and communication with, persons holding diverse views on environmental issues, with the objective of appreciatively and critically examining those diverse views and their implications for the resolution of a specific environmental issue (land use policy).

5. To develop reflective inquiry skills in:

   data collection
   value analysis
   decision-making
   social participation
   public communication

Objective: Specific*

1. Improvement in students' image of self-worth as evidenced by increased participation in environmental action activities, increased participation in class discussions, and responses on a pre/post questionnaire that evidences improved feelings of personal efficacy in affecting environmental quality by personal behavior, social action, and participation in the political process.

2. Improvement in each student's ability to use knowledge of natural processes (facts, concepts, and systems) to identify environmental problems relating to land use (in given situations) and to project or predict the implications of land use policies.

3. Improvement in each student's ability to use knowledge of political processes (facts, concepts, and systems) to identify problems in affecting land use policies (in given situations) and to develop strategies for affecting government land use policies.

4. Improvement in students' conceptions of man in the web of life (the interdependence of life and various cycles, i.e., water cycle) as evidence by student response in various instructional activities (i.e., ball of string activity), student responses in environmental communication activities (i.e., poetry, songs), and student responses in interactions with the teacher.

*Evaluation should be directed toward these specific objectives.

5. Improvement in students' conceptions of man (and self) in the web of social reciprocity (the interdependence of humankind) as evidenced by student responses showing concern for others in land use policy discussions and in predicting the implications of various policies on the quality of others' lives.

6. Improvement in students' ability to emphasize the persons holding diverse positions on land use issues as evidence in role-playing activities, in writing position papers, letter-to-the-editor, and slogans, and in poster-design, speech-writing, and graffiti activities.

7. Improvement in students' ability to communicate with persons who hold diverse positions on land use issues as evidenced by any personal letters written to public officials and interest groups, interviews with visiting officials and community leaders, personal participation in radio talk shows, and simulated dialogues with officials.

8. Improvement in students' ability to use reflective inquiry skills in classroom inquiry as called for in the instructional unit (i.e., data collection to employ evidence to test a hypothesis; value analysis of an argument or a position paper; decision-making process given a problem).

CONTENTS

Preface ii

Pre-Tests 1

I Introduction: Land-Use Awareness Activities 7

II The Concept of Land-use: The Pinellas County Experience 14

III An Historical View of Land-use and Planning: Social Policy Issues and Our Values 21

IV Four Major Land-use Issues in Pinellas County, Florida

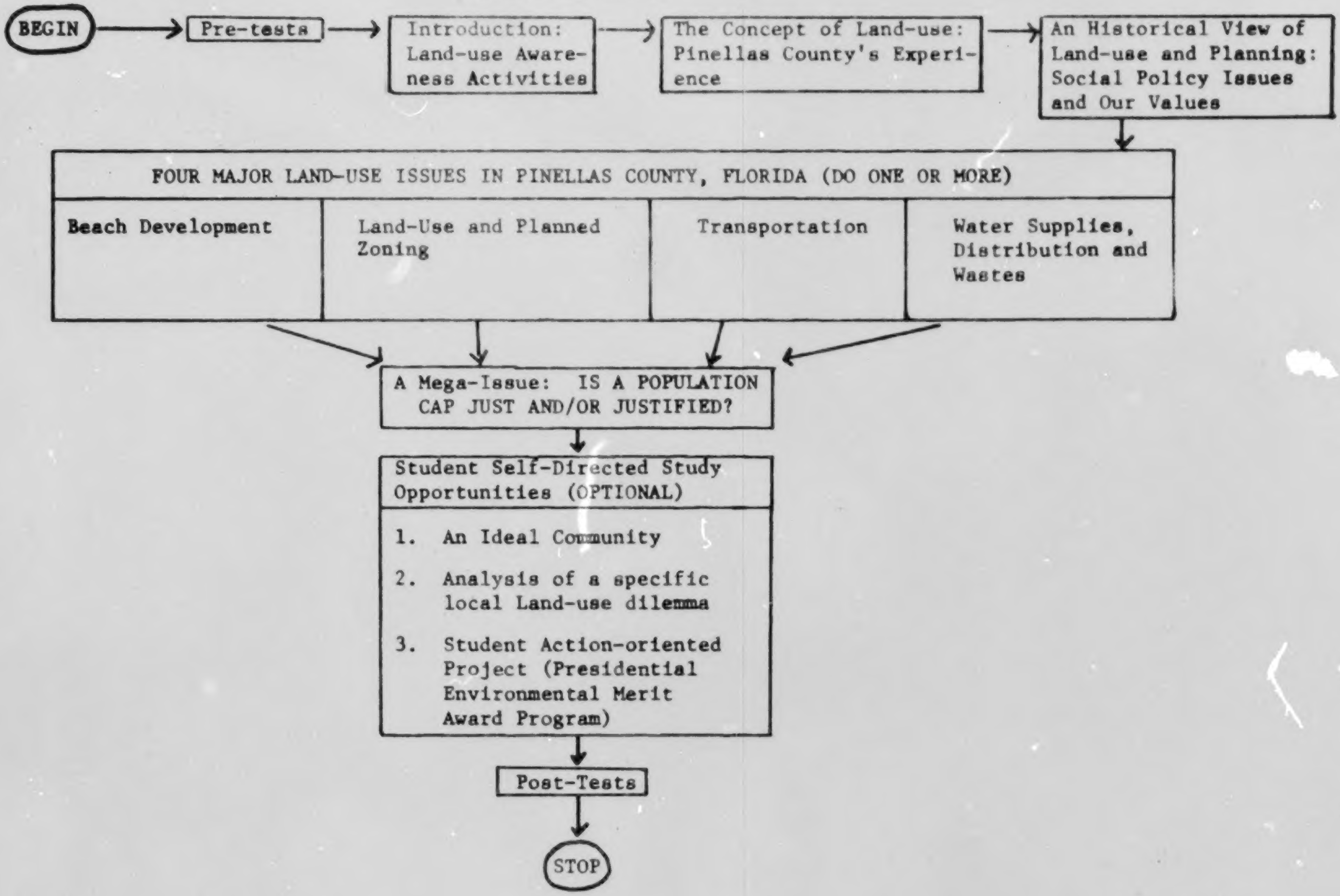
A. Beach Development and Natural Disasters 31
B. Land-use and Planned Zoning 66
C. Transportation 83
D. Water Supplies, Distribution, and Wastes 111

V A Mega-Issue: Is A Population Cap Just and/or Justified? 154

VI Student Self-Directed Study Opportunities 156

VII Post-Tests 157

UNIT FLOW CHART


BEGIN
Pre-tests
Introduction: Land-use Awareness Activities
The Concept of Land-use: Pinellas County's Experience
An Historical View of Land-use and Planning: Social Policy Issues and Our Values
FOUR MAJOR LAND-USE ISSUES IN PINELLAS COUNTY, FLORIDA (DO ONE OR MORE)
Beach Development
Land-Use and Planned Zoning
Transportation
Water Supplies, Distribution and Wastes
A Mega-Issue: IS A POPULATION CAP JUST AND/OR JUSTIFIED?
Student Self-Directed Study Opportunities (OPTIONAL)
1. An Ideal Community
2. Analysis of a specific local Land-use dilemma
3. Student Action-oriented Project (Presidential Environmental Merit Award Program)
Post-Tests
STOP

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PRE-TEST

PART 1 - WHAT DO YOU THINK

For each of the following questions state whether you strongly agree, agree, disagree or strongly disagree.

1. I can help change a decision to build through my neighborhood.
2. All public officials should be elected.
3. Most people are not aware of public policy decisions until after they are put into action.
4. Those that participate in public policy decision making benefit the most from those policies.
5. There are too many local governments in Pinellas County.
6. Too much time is spent planning public projects in Pinellas County.
7. An individual has to join a pressure group in order to participate in governmental decision making.
8. Taxes should not be increased in order to support community projects.
9. A strong chamber of commerce is beneficial to any community.
10. No community project should limit the expansion of business.
11. A wetlands ordinance is needed in Pinellas County.
12. City and County governments do not look after the public interests.
13. The sewage treatment facilities for Pinellas Caounty are adequate.
14. There are few pollution problems in Pinellas County.
15. Mass transit facilities are needed in Pinellas County.
16. Government officials should pay attention to public sentiment before approving new building permits.
17. A good citizen should actively participate in community projects.
18. Pinellas County roads are adequate to meet increasing traffic needs.
19. Beach erosion is not a problem in Pinellas County.
20. Heavy industry should be promoted in Pinellas County.
21. Additional condominiums should not be built in Pinellas County.
22. Pinellas County should limit the number of residents that can move in.
23. Ecologists are a noisy minority that should be ignored whenever possible.
24. Pinellas County beach residents have well prepared evaluation routes in event of a hurricane.
25. Progress is more important than protecting the environment.
26. I can do something to positively effect the zoning of a Hot Dog stand in my neighborhood.
27. Private property is sacred and should not be disturbed.
28. County development should be unified under one controlling agency.
29. Pinellas County needs more recreational areas.
30. The quality of my life in Pinellas County is threatened and there is not much that I can do about it.

PRE-TEST (Part 2)

ALLYOOPSVILLE

The time machine has suddenly catapulted you into prehistoric time. As you walk the streets of Allyoopsville, it becomes increasingly clear that not all is well! One of its leading citizens, Freddy Flintstone, informs you that this semi-tropical paradise has seen better days.

Freddy fondly remembers when his cavehouse lay nestled peacefully amidst the quiet forest. Today on one side of him sits an axe-grinding factory, and right across the street stood a McDonald's mammothburger, fast-food outlet. The forest is gone, and the landscape is dotted with condominocaves inhabited by the faraway tribes from Michigan and Ohio. Freddy sadly relates that for years cave migrants have been pouring into this area in search of fun and sun.

The city elders for years had ignored future transportation needs. Today the dinosaurmobiles clog the paths in frustrating tail-to-tail traffic resulting in huge traffic jams and motorists grunting in exasperation.

The water used to be plentiful. Ictofish used to abound in the fresh, pure waters. Now they are all gone -- killed by the condominocave sewage and industrial waste from the axe-grinding industries. And on top of that, water must be brought in from fifty miles away at Brontosaurus Bay.

Other headaches mentioned were such things as power shortages and low water pressure during peak use periods. Taxes have gone up 100 clams. County parks are so filled by tourists that the local cavedwellers need to put in a two-month reservation. Conrad Oop Motel has just "persuaded" the city council to rezone the last remaining beach property from recreational to commercial.

And now Mr. Flintstone faces the final insult. His happy cave is being threatened by the Tyrannosaurus Wrecking Crew who is intending to demolish it on orders from the government due to plans to construct a superhighway in its place. His cave, the very cave across whose threshold his wife was dragged by the hair twenty years ago! His cave, outside of which he once had to fight sabre-toothed tigers barehanded, was in danger! "No, by thunder," Freddy vowed, "he would never let them take his property away from him!"

Directions: Answer the following questions after you have read the story:

1. What generalization best sums up the plight of Allyoopsville?
   a. Excess population can put strains on a community
   b. Tourism has been good for the economy
   c. Heavy industry can cause huge pollution problems

2. The problem area which best demonstrates the need for long-range planning is in the area of:
   a. Restaurants
   b. Factories
   c. Highways
   d. All of these

3. Which of the following statements is closer to the truth?
   a. Condominiums have no place in the modern community
   b. The beauty of the natural environment can be adversely affected by business growth
   c. It is impossible for anyone to enjoy the outdoors in the modern city of toda

4. An Example of poor zoning was:
    a. The existence of restaurants, factories, and private residences in a close neighborhood area
    b. Highway congestion
    c. Condominiums

5. Which of the following does not contribute to a water problem?
    a. Sewage
    b. Ictofish
    c. Industrial waste
    d. Population gain

6. Which one of the following areas was not a major problem which accompanied the population explosion?
    a. Transportation
    b. Recreation
    c. Higher taxes
    d. Labor supply

7. Interests of "Big Business" can sometimes run in conflict with interests of the general public
    a. True
    b. False

8. In determining present-day land-use policies, which of the following should not be considered?
    a. Community reaction
    b. Political campaign contributions
    c. Cost
    d. Community needs

9. Which of the following would probably have the least influence on where a new highway would be located?
    a. American Automotive Association
    b. Real Estate Association
    c. Private citizen
    d. Florida Motel Association

10. Freddy Flintstone's angry conflict can be best described as:
    a. Man against man
    b. Man against environment
    c. Man against self
    d. All of the above

11. Flintstone's conflict can further be described as:
    a. Right of the environmentalists versus big business
    b. Private property rights versus the general public
    c. Retailers versus wholesalers
    d. "Little guy" versus the "big guy"

12. Considering the overall problems, what effect do yo think Freddy could have on making desirable changes?
    a. Strong effect
    b. Little effect
    c. No effect

PRE-TEST (Part 3)

GENERALIZING AND MAP SKILLS

A. GENERALIZING: PLEASE USE THE FOLLOWING DESIGNATIONS TO ANSWER EACH QUESTION. ALWAYS TRUE (AT), SOMETIMES TRUE (ST), NEVER TRUE (NT)

1. The extent of natural disaster on man will be determined by his prior warning time and preparedness.
2. Unforeseen natural disasters can be prevented.
3. As industrialization increases, the amount of water available for consumption increases.
4. Water consumption increases as the population decreases.
5. Transportation networks take into consideration cultural, social, physical, and economic factors.
6. In urban areas most land will be used for residential purposes.
7. Land designated for commercial or industrial use has a greater money value per acre than land designated for agricultural or environmental use.
8. Untreated commercial and industrial waste is harmful to the natural environment.
9. Private ownership will not always insure the best use of land.
10. As both urbanization and population increase, transportation problems decrease.

B. MAP SKILLS: USE THE LAND-USE PLAN MAP - (SLIDE AVAILABLE)

MULTIPLE CHOICE -- SELECT THE BEST ANSWER

1. Most of Pinellas land is zoned for which of the following?
   a. Commercial
   b. Manufacturing
   c. Public
   d. Residential

2. Most Gulf beach areas are zoned:
   a. Recreational
   b. Residential
   c. Manufacturing
   d. Commercial

3. The largest manufacturing area in Pinellas is located in the:
   a. North
   b. Central
   c. South
   d. Southeast

4. The largest area of unused land is located in what area of the county?
   a. Northeast
   b. Northwest
   c. Central
   d. South

5. The largest area of unused land is planned for what use?
   a. Residential
   b. Commercial
   c. Public
   d. Recreation

6. "Blue" in the map legend indicates:
   a. Residential
   b. Commercial
   c. Public
   d. Manufacturing

7. The most expensive land per acre is colored:
   a. Yellow
   b. Red
   c. Black
   d. Blue

8. Conflict between environmentalists and land developers will most likely occur in which area of the county?
   a. Southwest
   b. Central
   c. Northeast
   d. Northwest

9. Which of the following zonings would most likely add to the transportation problems?
   a. Residential
   b. Commercial
   c. Public
   d. Recreational

10. In the events of a tornado, what area offers the highest potential danger to human life per square mile?
   a. Northeast of U.S. 19 and SR 584
   b. North of Gandy Blvd. and southwest of Roosevelt Blvd.
   c. East of 34th Street and south of 22nd Avenue South
   d. East of 34th Street and 5th Avenue North

PRE-TEST KEY

PART I	PART II	PART III	
		PART A	PART B
Non-Graded Opinion Questions	1. A	1. AT	1. D
	2. D	2. NT	2. D
	3. B	3. NT	3. B
	4. A	4. NT	4. A
	5. B	5. AT	5. A
	6. D	6. AT	6. C
	7. A	7. AT	7. B
	8. B	8. AT	8. D
	9. C	9. AT	9. B
	10. A	10. NT	10. D
	11. B		
	12. B		

I INTRODUCTION: LAND-USE AWARENESS ACTIVITIES

Objectives:

Students will examine their urban area and their place in that area in order to reflect upon their perceptions and feelings.

Students will share their feelings and values in creative ways: poems, songs, stories, speech writing, etc.

Materials:

Handouts 1 and 2 in the Appendix to this section.

Lesson Plan:

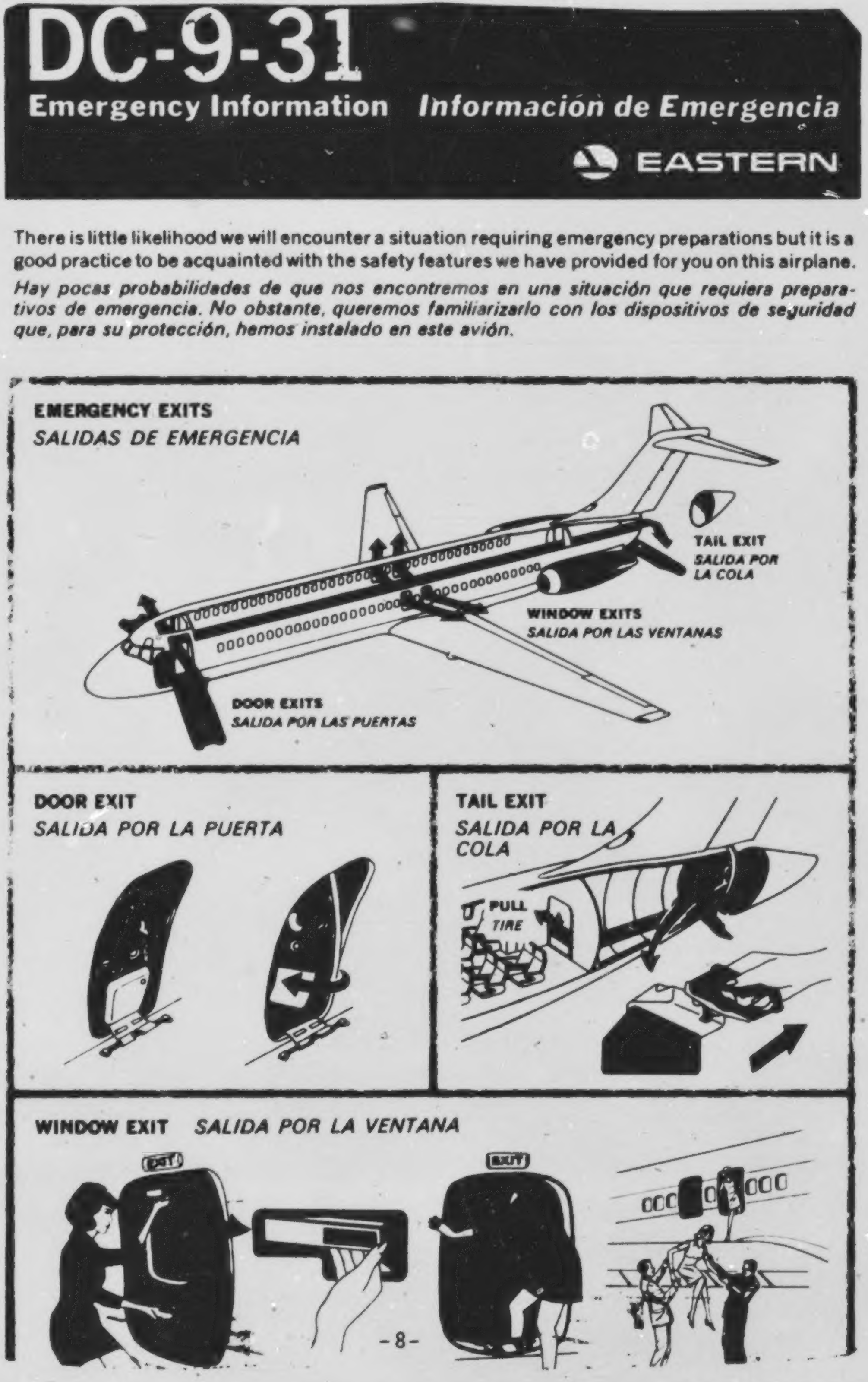
Ask students to examine Handout 1. After a discussion of the airplane escape card as a plan for using an airplane with the goal of survival, move to reflection upon the goal of life and the plan for living (explicit and implicit) which have guided the development of Pinellas County.

Have students summarize their judgments in their notebooks for future reference.

Distribute Handout 2. Work with students as they select various activities. After they perform the activities selected, conduct a sharing discussion with the emphasis upon value awareness of urban life.

Handout 1

Persons who want to live, plan their lives. Some plan more carefully than others. One plan is printed below. What is its purpose? How carefully was this plan made? Now, think about the plan for living in Pinellas County. How carefully have persons planned the use of land, the design of transportation, etc.?



DC-9-31

Emergency Information *Información de Emergencia*

EASTERN

There is little likelihood we will encounter a situation requiring emergency preparations but it is a good practice to be acquainted with the safety features we have provided for you on this airplane.

Hay pocas probabilidades de que nos encontremos en una situación que requiera preparativos de emergencia. No obstante, queremos familiarizarlo con los dispositivos de seguridad que, para su protección, hemos instalado en este avión.

EMERGENCY EXITS
SALIDAS DE EMERGENCIA

TAIL EXIT
SALIDA POR LA COLA

WINDOW EXITS
SALIDA POR LAS VENTANAS

DOOR EXITS
SALIDA POR LAS PUERTAS

DOOR EXIT
SALIDA POR LA PUERTA

TAIL EXIT
SALIDA POR LA COLA

WINDOW EXIT *SALIDA POR LA VENTANA*

Handout 2 With your teacher's help, choose one or more of the following activities and perform!

1. Why do people live in Pinellas County? Parade Magazine (December 2, 1973) had an article which reported on persons' attitudes toward places to live. Only 13% of those persons interviewed thought that a city was a good place to live! Most wanted green grass and trees around them, with clear water and clean air. Persons seemed to indicate the following features of an ideal place to live:

   - Psychological. Emotional security is most important, to reduce anxiety. "There's a need to use body and mind and have a chance for self-expression. To relieve tensions, the community should have, or be close to, leisure-time recreation facilities."
   - Economic. "While cost of living is a factor, I don't think it is a priority in most cases. People choose to live where they can be productive and feel economically secure."
   - Social. A sense of community should prevail, where you can make friends easily, develop a good social life, and become involved in meaningful local activities.
   - Education. Good schools for young families and a church of your denomination represent tangible values.
   - Environment and climate should be such that you get away from pollution and urban anxieties.
   - For youth, opportunity for excitement; for the middle-aged and elderly, a quiet atmosphere, near medical services.

Does your place --Pinellas County, Florida --have all of these features? Report on your response to the class.

2. Zoo Story. Think about the main features of a zoo. Write a short story or several paragraphs comparing and contrasting your urban area with those features of a zoo.

3. One author wrote the following paragraphs about urban areas:

   "The large city has outlived its usefulness. New York, for example, features overcrowding, inadequate municipal services, air and water pollution, crime in the streets, ethnic clashes, and widespread poverty. Even its cultural life is artificial, for it is restricted to the educated few, and it drains the rest of America of its promising young talent. It is a bad place to live; it's even becoming a bad place to visit." To what degree is this assessment a fair one?

Write a speech to express your agreement or disagreement with her judgment.

4. Inventory a child's needs in Pinellas County:

I Infant 0 - 2 years ______________________________
____
____

II 3 - 6 years ______________________________
____
____

III 6 - 10 years ______________________________
____
____

5. Inventory a Senior Citizen's needs in Pinellas County:

____
____
____

Which needs are fulfilled today:

____
____
____

6. Emma Lazarus wrote the following poem about the Statue of Liberty in 1883. It was hoped that the poem would help raise money to put up the statue in New York Harbor. The monument was completed in 1886. The poem was inscribed on the base of the statue in 1908.

The New Colossus

Not like the brazen giant of Greek fame,
With conquering limbs astride from land to land;
Here at our sea-washed, sunset gates shall stand
A mighty woman with a torch, whose flame
Is the imprisoned lightning, and her name
Mother of Exiles. From her beacon-hand
Glows world-wide welcome; her mild eyes command
The air-bridged harbor that twin cities frame.
"Keep ancient lands, your storied pomp!" cries she
With silent lips. "Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me,
I lift my lamp beside the golden door!"

Write a poem or song expressing your feelings about new residents who plan to move into Pinellas County between now and the year 2000 AD.

7. What kind of urban person am I? List 10-30 adjectives which answer this question. Be honest!

Now list 10-30 for the ideal urban person. Do the lists match?

8. In ancient Athens, citizens took the following oath:

> The Athenian Oath: "...we will strive unceasingly to quicken the public sense of public duty; that thus... we will transmit this city, not only not less, but greater, better and more beautiful than it was transmitted to us."

Write an oath for residents of Pinellas County in the 1970's:

9. Grouping

Think about the people in Pinellas County. Into how many groups can you divide the people in Pinellas?

Black -- White
Young -- Old
Liberal -- Conservative

________ etc. ________

A. Look at a map of Pinellas County. How has the land-use pattern divided people?

B. Look at a map of your school. How does the school divide people?

10. Interview five persons in Pinellas County:

    1. The person I am interviewing is:
    2. What is your job?
    3. What time did you get up this morning?
    4. List five things you did before you left the house.
    5. How do you go to work?
    6. Where do you work?
    7. What would you do during a morning at work?
    8. Where do you eat your lunch?
    9. What would you do during an afternoon at work?
    10. How do you get home after work?
    11. Do you belong to any clubs? What?
    12. Do you go to night school? Which ones?
    13. How often do you use the telephone daily? For what reasons?
    14. Do you subscribe to a newspaper or magazines? Which ones?
    15. What other services do you use?

11. You are in the business of advertising in Pinellas County. Find out what the county has that a visitor would want to do or see. Make a booklet to advertise those things, inviting people to visit the county.

12. You have just returned from visiting another city on vacation. Make a little display telling us and showing us what you did and saw. This display should make the city interesting enough to make us want to visit the city too.

13. You work for an airline company. You have been asked to advertise a city for them. Make a travel poster to invite people to visit Pinellas County.

14. Writing - list of words
- poem
- story
- newspaper article

e.g. give an opening line for a poem

i) To the city I'll travel and there I'd see
ii) I have a friend in the city
iii) City! What is it? I think I know. It is....

- give a title for a story
  - i) Sounds of Pinellas
  - ii) Lost in Pinellas
  - iii) Shapes of Pinellas
  - iv) People in Pinellas
  - v) Where Has All the Country Gone in Pinellas?

- suggest a situation for a newspaper article.
  - i) cars are no longer allowed downtown
  - ii) cities for children, fun and beauty
  - iii) a citizen is concerned because an old building is being torn down
  - iv) a report on a sports team, e.g. football or hockey

15. Building a Bulletin Board of Current Events from Pinellas -newspaper articles could be cut out in shapes of people, buses, buildings, etc..(the article itself could be shown by bordering it with magic markers.)

16. Making a Collage on Pinellas Life - topics might be:
1. people (doing things, e.g. shopping, working)
2. traffic jam
3. industry or just an overall collage about Pinellas

II THE CONCEPT OF LAND-USE: THE PINELLAS COUNTY EXPERIENCE

Objectives:

Students will be able to define: population density, land-use, population growth, tourism, resident.

Students will make hypotheses to explain population growth and land-use patterns and collect data from charts and graphs to confirm or to alter their hypotheses.

Students will interpret aerial photographs and share personal statements of fact and feeling.

Students will know that population growth means greater population density, compounded by increasing tourism.

Materials:

Appendix to this Section:
   Handouts 1 - 5.
Aerial Photographs

Lesson Plan:

Show students an aerial photograph of any section of Pinellas County. Ask them to describe what they see (e.g., city blocks, parklands, buildings, vegetation, etc.). Then, ask them to make some general statements of their impressions of what they see and feel (e.g., "Boy, people are really packed in there." "Look how crowded it looks from up here.").

Indicate that the aerial photographs show how we in Pinellas County use our land. These land-use patterns don't just happen, we make decisions that result in such patterns of land-use. Ask students what land-use changes they see in their neighborhoods. List these observations on the chalkboard.

Distribute Handouts 1 and 2. Ask students what these maps indicate about changing land-use in Pinellas County. Do data from these handouts confirm or conflict with the students' observations listed on the chalkboard.

Show students how population density is computed (total population in a given year divided by the total land area in square miles).

Ask students what will happen to population density and land-use if the current population trend continues for ten to twenty years.

Distribute Handout 3. What does this tell us about land-use and population density?

Once students show comprehension of current population trends on land-use in Pinellas County, ask them to list the reasons why population is growing. For example, the attractiveness of the area for retirement and tourism, climate and environmental quality, recreational factors, few major urban blight and violence areas (as in northern urban areas), employment opportunities, etc.

Distribute Handouts #4 and #5. Ask students what these charts show. How do these charts indicate changing land-use patterns? Do data from these charts confirm or conflict with land-use impressions listed earlier.

Extending Activity: Several students might survey newspaper ads and literature distributed by the Chamber of Commerce and other groups trying to attract residents and tourists to Pinellas. What arguments (reasons) do these sources offer to attract residents and tourists? What impact does this make on land-use patterns?

HANDOUT 1

In 1950, the population of Pinellas County was about 160,000, just a fraction of today's 731,512 population. In a single generation the County has emerged from an obscure semi-rural status to a place among the top growth areas of the metropolitan areas of the United States. Moreover, it is estimated that the County's population gain of the past two decades may be experienced again in the next 8 or 10 years. By 1988 Pinellas County will likely pass the one million mark, continuing to be one of the fastest growing of the Nation's major population centers. Needless to say, the County will undergo a phenomenal physical change in the process. Only time will tell whether the change has been for the better. For growth alone does not necessarily spell improvement.

Today, there is growing acceptance of the idea that improvement can be directed, to a degree, by community planning and action programs, involving good working relationships between government and private individuals and associations. A dynamic urban region like Pinellas County must develop and apply the best that is possible in such cooperative effort, if the problems of rapid and uncontrolled growth are to be minimized.

Plans by nature, are designed to show the ways and means for attainment of well-defined objectives. Before and during preparation of plans, therefore, the community must consider and decide upon its purposes. Then it must formulate and adopt principles, policies, and standards that are appropriate to the stated purposes and that will serve as a basis for the plans.

1970 Population	1974 Population	Percent Growth
522,329	731,512	40.0%

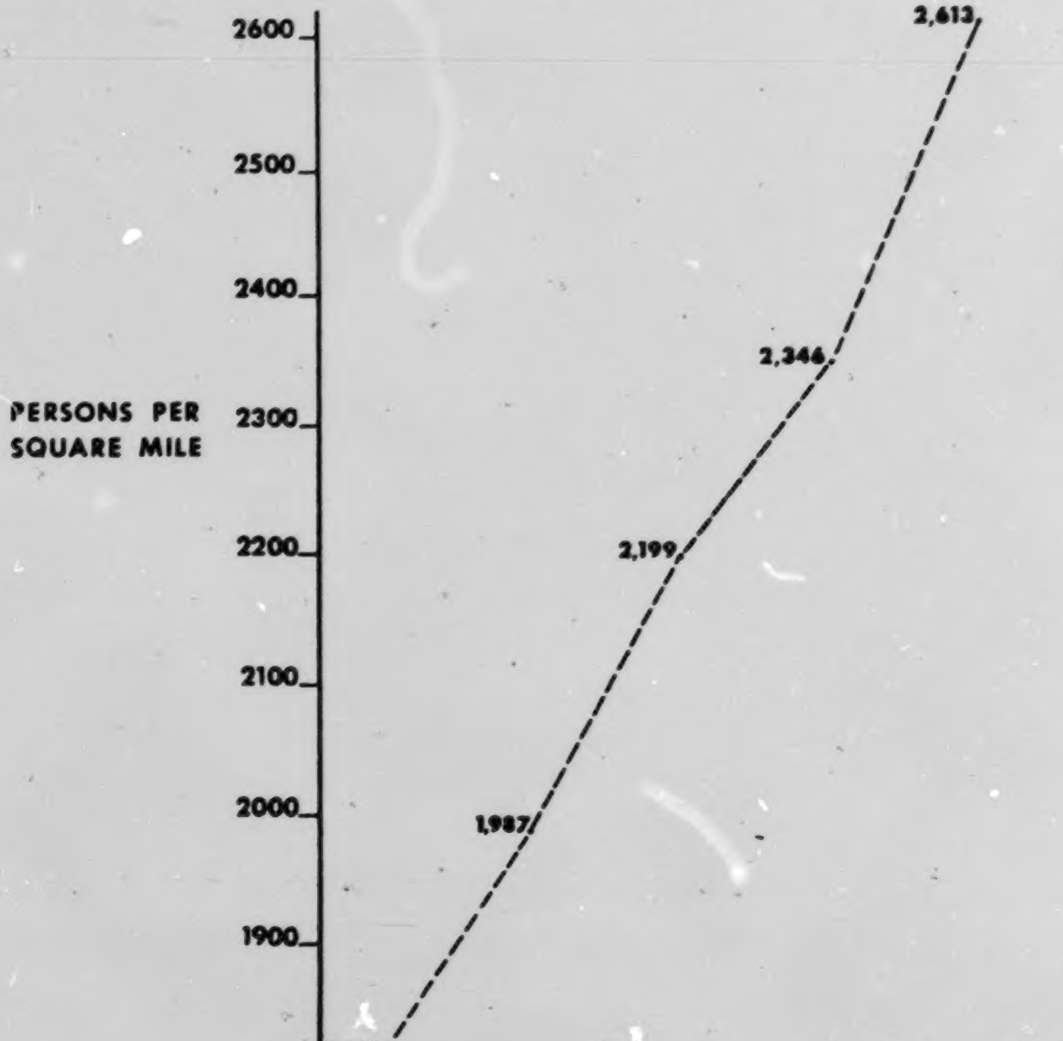
Total Area of Pinellas County (square miles)

HANDOUT 2

Webster defines density as (1) "the quality or condition of being dense, thick, compact, or crowded", (2) "quantity of number per unit, as of area; as, the density of population." With population the concern is with both the above definitions, although the measure per unit or area is the most significant in determining the condition of a particular area. Population studies primarily use density with relation to persons per unit or area.

Pinellas County is the most densely populated and one of the fastest growing counties in Florida. Pinellas is also the fourth largest urbanized area in the state. As of the 1970 Census of Population, Pinellas County had a gross density of 1,813 persons per square mile based on a population of 522,329.

DENSITY LEVELS-PINELLAS COUNTY
1970 - 1974
PERSONS PER SQUARE MILE



HANDOUT 3

An overall population count in Pinellas County must take into consideration the tourist. Due to seasonal fluctuations, tourists can account for an additional 75,000 to 250,000 persons daily in the County. This is an actual increase as far as most local services are concerned. The County's peak tourist months are now spaced throughout the year, and should no longer be considered primarily a wintertime increase. It would be appropriate to add an average of 150,000 tourists to the County's 731,512 permanent residents when considering the needs for public services on a daily basis. This is based on the Florida Department of Commerce's estimate of 3,547,965 tourists visiting Pinellas County during 1973.

The transient or tourist population, due to sheer numbers, is a significant user of the facilities and services of the County, and therefore of paramount importance in the planning for the future of these same facilities and services. Some interesting aspects which might be considered in the future are the demand on the County's "service industries*", on such facilities as streets and highways, solid waste, water requirements and sewage treatment.

TOTAL ANNUAL TRANSIENT POPULATION 1961 - 1973

YEAR	TOTAL NUMBER OF TRANSIENTS	YEAR	TOTAL NUMBER OF TRANSIENTS
1973	3,547,965	1966	1,929,427
1972	3,474,422	1965	1,818,821
1971	3,297,600	1964	1,596,751
1970	2,840,443	1963	1,649,067
1969	2,873,283	1962	1,526,015
1968	2,647,053	1961	1,352,561
1967	2,372,752		

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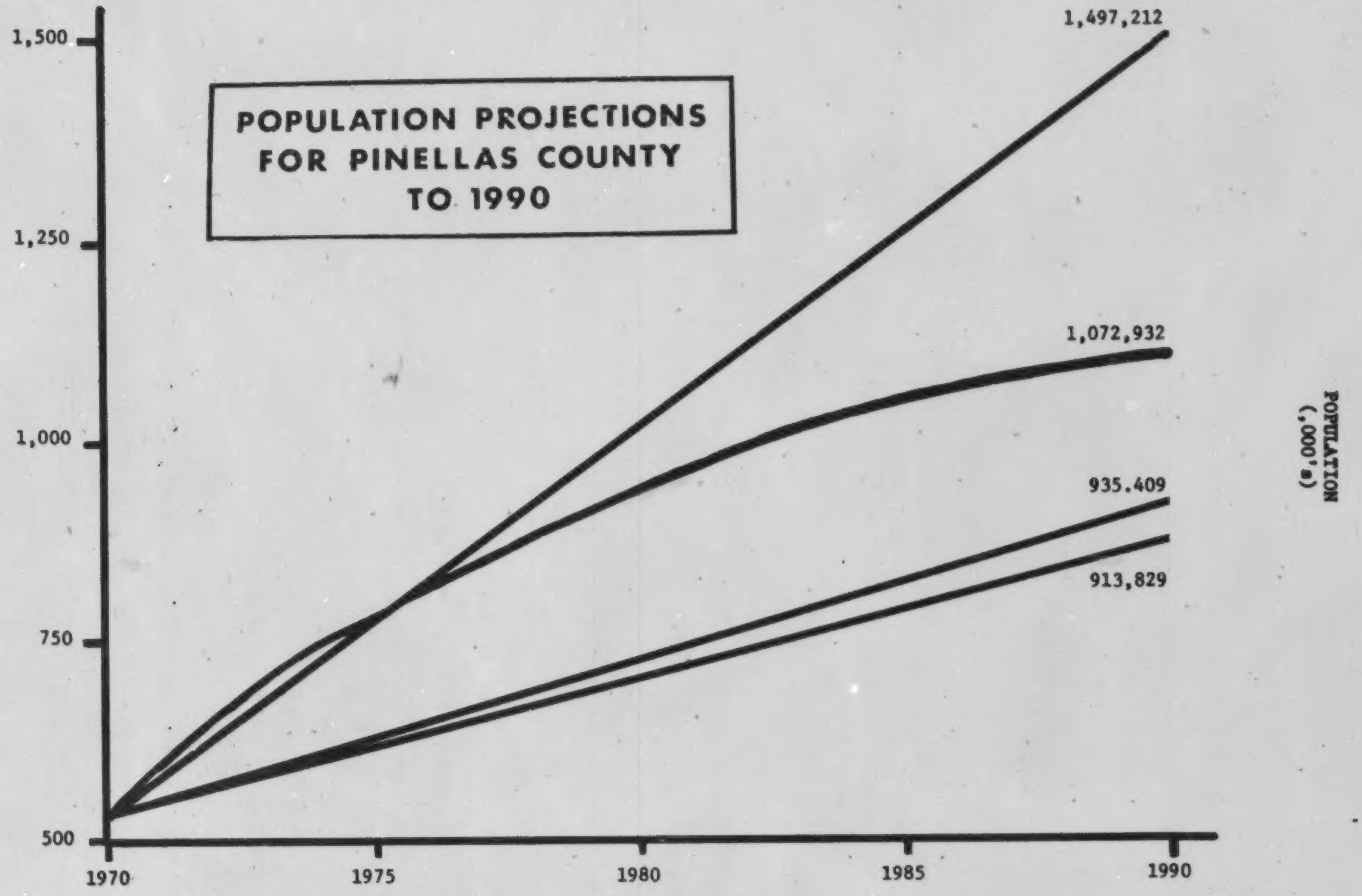
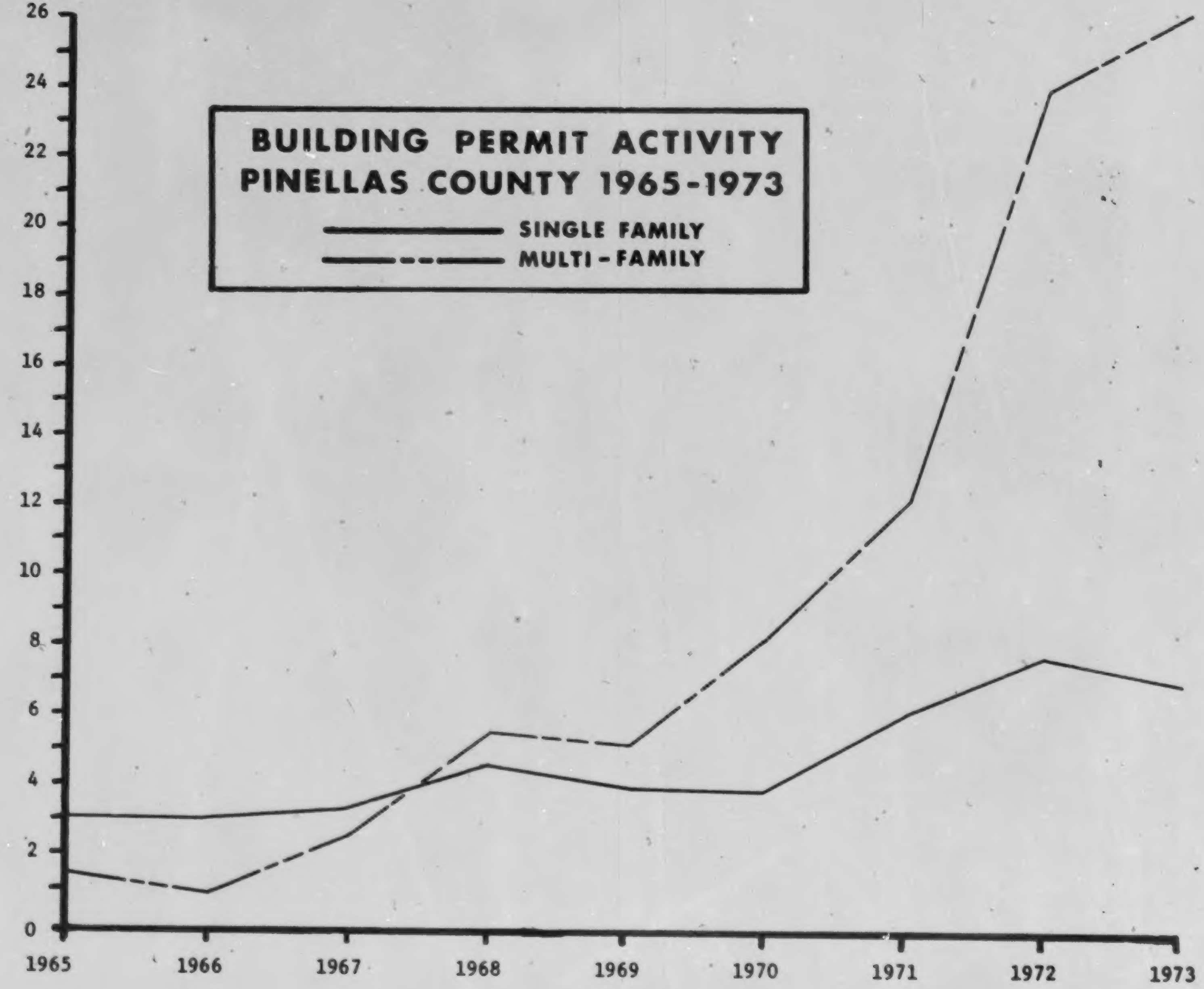
*Service Industries - Those places of business, both directly and indirectly involved in providing needed services to the total population, including both tourist/temporary and permanent residences.

Handout 4



POPULATION PROJECTIONS FOR PINELLAS COUNTY TO 1990

Handout 5


BUILDING PERMIT ACTIVITY
PINELLAS COUNTY 1965-1973
SINGLE FAMILY
MULTI - FAMILY
0
2
4
6
8
10
12
14
16
18
20
22
24
26
1965
1966
1967
1968
1969
1970
1971
1972
1973

III AN HISTORICAL VIEW OF LAND-USE AND PLANNING: SOCIAL POLICY ISSUES AND OUR VALUES

Objectives:

Students will know that crowding and congestion have adverse consequences for humankind; that there are various ways to confront such problems, including planned land-use patterns and new urban designs.

Students will know that humankind has imagined various ways of urban living but that these ways in America have confronted basic values in our culture and constitution (the fifth amendment) -- private rights and community interest.

Materials:

Appendix to this Section:
Handouts 1 to 4

Lesson Plan:

Remind students of the population growth forecasts for Pinellas County which they examined in the previous lesson. Distribute Handout 1. After students have read the article by Stewart Alsop, pose questions to check their comprehension of Dr. Calhoun's research. While he talks about world population growth, the research may apply as well to massive urban population crowding.

Ask students to list the problems associated with massive urban crowding -- and to state the reasons they think that such problems arise (e.g., crime, violence, child abuse, apathy, anxiety, visual pollution, isolation, anomie, etc.).

Ask students if they have 1) seen expressions of these problems on television, and 2) seen expressions of these problems in Pinellas County. Discuss these at length.

Break the class into small groups to develop a list of ways to confront the problems of population density in urban areas. Handout #2 might be used as a springboard to focus attention on one alternative.

Students should combine their group lists into a class list. Then, each student should rank order the "ways" from "1" for the "best."

Distribute Handout 3. Tell the students that humankind has always imagined different ways to live on the land. The handout contains one person's imagining -- a "garden city." Discuss the advantages of this city design and how the land is used. What ideas does this offer to residents of Pinellas County? Can you imagine better ways to improve land-use here?

The problem in improving land-use, however, is not just a matter of imagining a better way! There is the little matter of actually doing it. Distribute Handout #4. This deals with the value conflicts in the land-use problem:

Private Property rights - - -vs- - - the common good of the community (public interest)

Can we control a person's property without just compensation?

Teachers might help students explore their values on this issue by posing the following situations and letting students share their judgments:

The city taking a person's front yard for a road widening project.

The state buying a person's land for a park.

The zoning board blocking the construction of "Golden Arches" with burgers at an intersection.

The city blocking the destruction of an historic building in order to build a new bank.

The city forcing a new shopping mall to have a certain number of parking spaces.

The city limiting the height of a new apartment building.

The city requiring that new housing projects include housing for low and middle income families as well as luxury homes.

Extending Activity:

Show the class the film "The Dehumanizing City...and Hymie Schultz," in the Searching for Values Series, Learning Corporation of America. 16mm. color. sound. 19 minutes. This film is a clip taken from the feature film, The Tiger Makes Out. It deals with the individual struggle against bureaucracy, anonymity, and a mass society.

BEACH DEVELOPMENT

Introduction:

Florida! What image comes into your mind when you hear that word?

Sparkling clear, blue-green water, rippling and dancing upon crystal white sand. It brings to mind those funny little sandpipers, scooting along the shore with the ebb and rise of the tide and gleefully racing away at the approach of the happy, tanned people walking the beaches -- the once-beautiful Florida beaches...!

But now what do you find as you jog or walk along the beach? There are areas of sand dunes and sea oats -- but very few in number. There are areas of high-rise housing units and areas of private homes -- but the high-rise structures are multiplying rapidly while the small homes are disappearing. All too often the beach you travel is encumbered and distorted with commercial buildings and sadly with only a smattering of public park and swimming areas. And off-shore, here and there, are the signs of oil rigs at work.

The simple tranquility and natural development of our beautiful beaches are rapidly disappearing, and no one seems quite sure what we'll have left. What is your responsibility in planning the development of our beaches?

Consider the following questions and case studies; and although you may not solve the problems involved, you will be able to increase your knowledge of the situation, know more clearly where you stand, and, hopefully, begin to take some action later in your life.

QUESTIONS:

What changes have you noticed, in structure and form, along our beaches? Ask your parents and friends who have lived here for a fairly long time to tell you what changes they have seen.

What plant and animal life do you encounter along the beaches -- on the shore and in the water?

What makes you happy at the beach?

What makes you sad?

What changes would you like to see along the shoreline?

What beach sounds please you?

What sounds irritate and distrub you?

What can you do to make the beach a little nicer.

What is the effect (as far as you can tell) of the rapid growth we are experiencing along our lovely beaches?

What modifications or alternatives can you think of to help achieve a more natural and orderly development of the Gulf Coast?

NOTE TO THE TEACHERS:

The problems and issues covered in the following case studies and optional activities are inter-disciplinary, including Social Studies, Environmental Studies, English, Science and Humanities. They are keyed to meet the Florida accreditation standards of these disciplines.

MATERIALS:

1. Aerial maps to study comparative changes along the Gulf Beaches.

2. Slides of actual beach scenes depicting the issues presented in the case studies. (see following sheet page #33)

3. Hand-outs concerning each problem area.

ACTIVITIES:

1. Role-playing
2. Simulation game
3. Aerial map exercises
4. Class dialogue on issues of case studies presented
5. Optional field trip

OBJECTIVES:

1. To emphasize the conflict between human desire for wealth and comfort and the danger the pursuit of such desires poses to our natural environment.

2. To clarify the need for conscientious decision-making by involved citizens, using the processes of democratic government.

3. To increase awareness that the county functions as a biological community and that the Gulf beaches must be preserved as part of an overall ecosystem if that system is to continue to function for the benefit of the people of Pinellas County.

4. To develop an ability to analyze and compare maps and statistics.

5. To build a realization of the destructive forces of nature (e.g., hurricanes and tornadoes) and of man's responsibility in dealing with these forces.

SKILLS:

(Listed in the Elementary and Secondary, State and National Standards: '71)

1. Organizing and evaluating information.
2. Applying problem solving and critical thinking.
3. Locating, acquiring and interpreting information.
4. Generalizing from cause - effect relationships and the nature of change.
5. Analyzing data to show effects of intelligent vs. wasteful use of resources.

GENERALIZATION:

Individuals may affect the general environment when they alter one specific part of the environment to suit their own needs.

RECOMMENDED USE OF SLIDES

BEACH ACCESS

1, 2, 3, 4	Illustrate public access easements and beaches.
5, 6, 7, 8, 9, 10	Illustrate a beach area that was once publicly used but not is closed and being developed.
11, 12	Illustrate access easements that were once public but now closed to resident-only parking.

BEACH FIELD TRIP

13, 14, 15, 16	Illustrate sights which are common [illegible] anyone walking along the beach.

SIMULATION GAME ON HURRICANES

17, 18, 19, 20	How would these areas be affected by hurricane-force tides and winds?

These are only recommendations of the way the slides can be used. Depending upon teacher discretion, these slides can be used effectively in any combination.

WHO SHOULD USE THE BEACH

(A Role Playing Game)

VOCABULARY

role
conservative
marine
public relations
commercial
habitat
zoning board
commodity

MATERIALS:

1 - Transparency of unused beach land form.
1 - Transparency of occupied beach land form.
25 - Aerial photographs of undeveloped beach land form.
25 - Aerial photographs of developed beach land form.

MAJOR PARTS OF THE ACTIVITY

I - Background: Lead the class in a general discussion concerning the use of beach land in their area.

Considerations for discussion:

1. Public Beach use
   a) swimming
   b) surfing

2. Commercial
   a) motel
   b) restaurant
   c) apartments
   d) stores
   e) marinas
   f) harbors

3. Single family dwellings

4. Undeveloped (vacant)

5. Recreation (camping)

This activity should take no more than 3 - 4 class periods.

II - Assignment of roles and preparation for the hearing. Hand out roles and organize the four groups into the various interest positions. The students should be allowed only two class periods for assignment of roles and the researching of same.

III - Zoning Board Hearing:

During the hearing each interest group will present their cases. After the presentations have been made the zoning board will make their decision in public, with the chairman calling for the vote.

The hearing should be limited to one class period.

IV - Culminating Discussion:

This discussion may be initiated by allowing questions for the general group as to the outcome of the vote by the zoning board. Questions to help stimulate further discussion are included in teacher directions under culminating discussion.

This part should be kept to one class period.

GENERAL DIRECTIONS

Students should base the information for their roles on personal research.

Possible sources:
- Family members
- Teachers
- Neighbors
- Library

The teacher should use good judgment in role selection. The outcome of this activity will hinge on the teacher assignment of the roles.

Important roles:

Bill Bixby - Chairman Zoning Board
Brett Jamison - Lawyer representing Cal Henderson
All Zoning Board members

The following roles may be eliminated if the class size warrants:

Helen Banner, bird watcher
Jack Hobart, boater or Al Perry, water skier
Craig Duncan, Concession Stands, Ltd.
Jim Monaldi, camper
Barbara Miller, single girl

If class exceeds thirty, students may be permitted to team play any role except zoning board roles.

An attempt should be made to keep the groups even in number.

GUIDELINES:

While the interest groups meet, the zoning board should meet concerning procedures to be followed during the hearing. Other duties of the zoning board are to be available to interact with any individual or interest group. It shall also be the responsibility of the zoning board to organize the physical arrangement of the classroom in preparation for the hearing.

The use of beach areas is an important consideration in that beach areas are a very limited commodity. Each beach area now under development, at one time passed through the process represented in this activity.

The hearing will consider a petition by Cal Henderson to change the type of zoning which now exists on his acquisition. Reoresebtubg Cal Henderson will be his lawyer, Brett Jamison.

The vote by the zoning board will be final with only the culminating discussion to follow.

Any ideas expressed during this activity should be accepted by the teacher.

TEACHER PROCEDURE:

Open the activity with a discussion based on the knowledge that a student might have about beaches with which he has come in contact.

For example - the students should be able to suggest existing conditions about beaches. One might begin by asking:

1. What do you like to do when you go to the beach?
2. What types of buildings do you see when you go to the beach?
3. How do you think beaches should be used?

Show the students a transparency of an uninhabited peninsula. Ask:

What would you do with this peninsula?

Answers will vary but general discussion should bring out the ideas of the group.

Show the students a transparency of an inhabited peninsula or beach. Ask:

What process was followed that brought about this outcome?

Answers will vary. All ideas expressed should be accepted. No attempt to educate students with teacher knowledge should be made at this point.

Then say: The decision of who builds what and where one builds it is something we will look at a little closer through a role playing game.

ROLE ASSIGNMENT:

At this point roles should be assigned. Refer to "general directions."

Explanations of each role should be held to a minimum. Encourage students to figure out their own ideas about the role.

THE HEARING:

The Chairman of the zoning board will control the hearing. The Chairman should arrange the class period so that each group knows in advance their alloted time. After the presentations have been made the zoning board will make their decision in public with the chairman calling for the vote.

If time permits questions directed to any member of the zoning board would be in order.

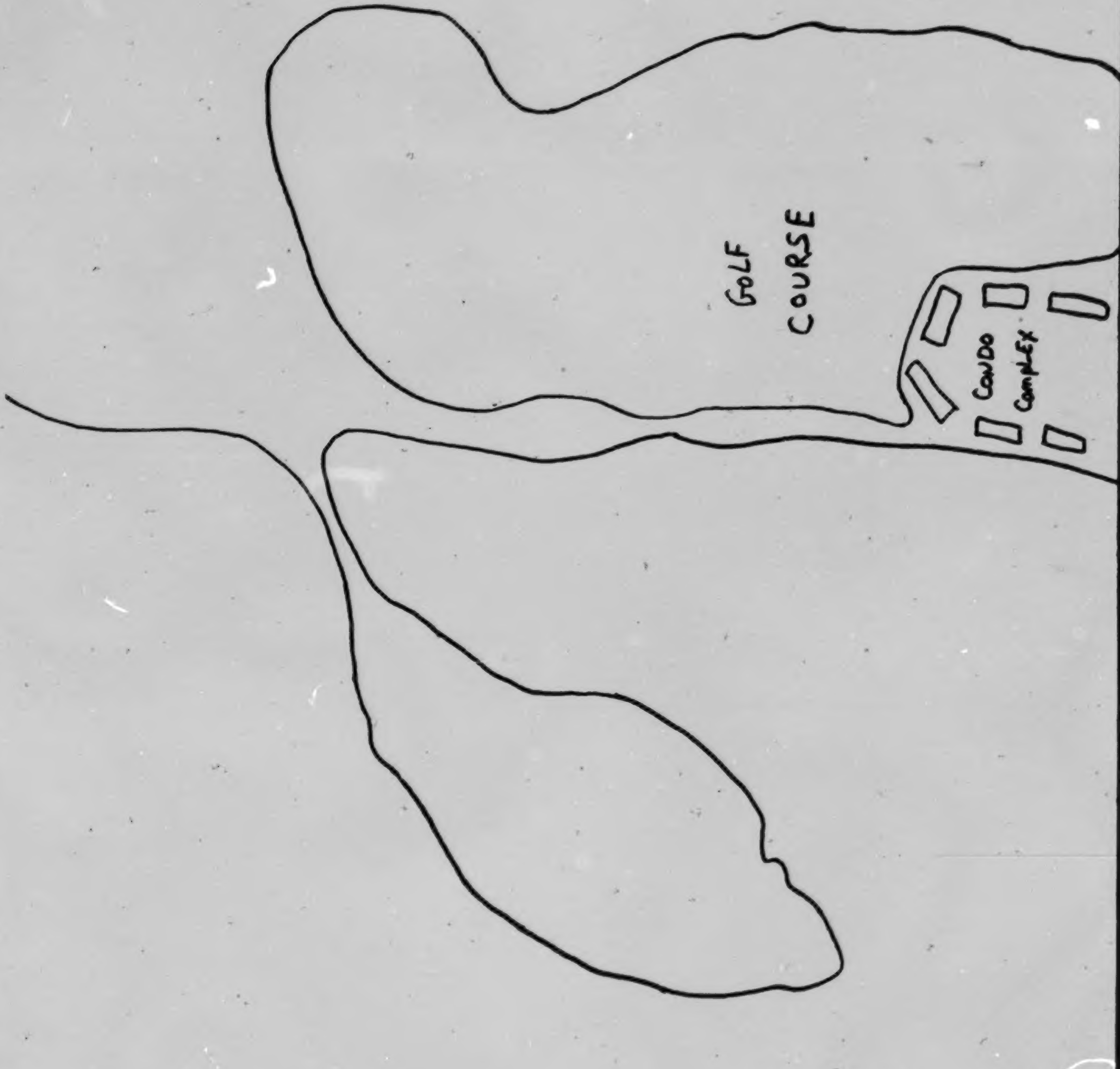
CULMINATING DISCUSSION:

Teacher lead discussion should follow the hearing using the following questions:

1. Did anyone sense the outcome of the boards vote before the actual votes were cast?

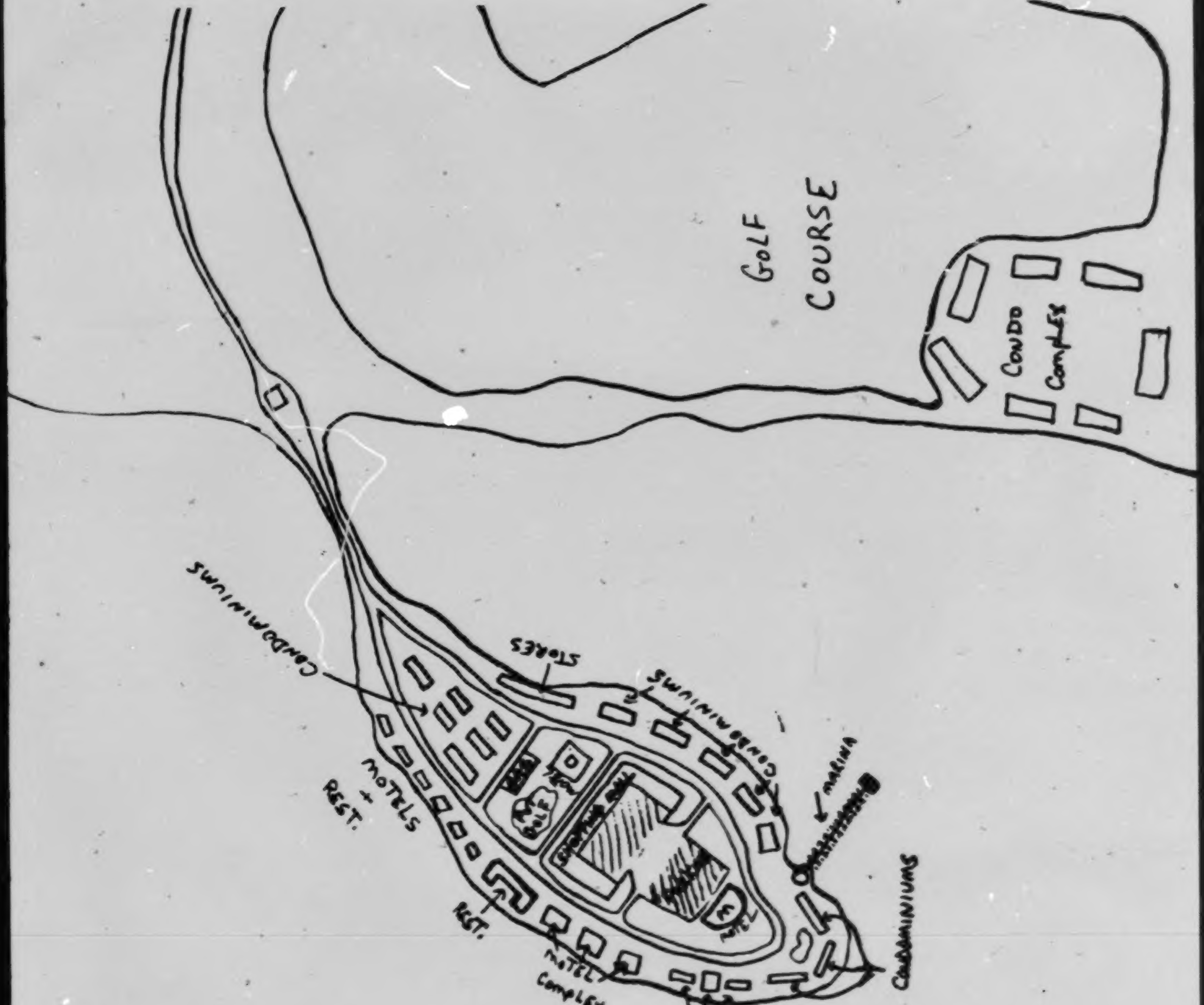
2. Should personal interests affect the decision making process?

3. Do you feel that all zoning boards make decisions in this manner?
4. Do you agree with making decisions in this way?
5. How would you change this process?



BEFORE

AFTER


GOLF COURSE
CONDO COMPLEX
CONDOMINIUMS
STORES
CONDOMINIUMS
MARINA
CONDOMINIUMS
MOTELS + REST.
MINI GOLF
TENN
SHOPPING MALL
MOTEL
REST.
MOTEL COMPLEX
MOTEL

ROLES

ZONING BOARD

CHAIRMAN - Bill Bixby - age 48 - Bill is the brother-in-law of Cal Henderson. In Bill's capacity as a management consultant he has been informed that Cal wishes to make him Senior Vice-President in Condominiums Unlimited as soon as his term on the Zoning Board ends next month. Bill would like to have this position because it means a move up in the business world as well as a substantial salary increase.
The Chairman will be in charge of the zoning board hearing. It will be your responsibility to bring the meeting to order, establish the process to be followed during the hearing and to inform each group of their allotted time to present their feelings.

Marsha Littlejohn - age 34 - Marsha's job as Public Relations consultant is to keep the relations between the business world and the average citizen as friendly as possible.

Martin Calborn - age 44 - Martin is a successful Real Estate man and owns a considerable amount of property in the community. He could benefit from this beach development.

Jason Andrews - age 62 - as Bank President Jason has been approached by Cal Henderson in regards to the availability of commercial loans for future development of this beach area.
Jason is the Chairman of this Board. He will call the meeting to order and will poll the members when its time to vote on this issue. He also should be sure that each member on the zoning board knows the other persons role.

Jill Tosco - age 38 - Jill has thoughts about building a fancy new dress shop if the beach is developed.

ENVIRONMENTALISTS

Hal Martin - age 21 - Hal is majoring in Marine Biology at the local University.

Steve Jones - age 31 - Steve is on special assignment here as the representative of the State environmental agency.

Bob Jonas - age 36 - Bob is concerned about the effect this development will have on the fish and wildlife of the beach. He is the State agent in this area.

Helen Banner - age 63 - Helen has been coming to the beach for years just to watch and study the Bird Life on this unspoiled section of the community.

Harry Barker - age 41 - as the representative of the Army Corps of Engineers, Harry can describe the disruptions this development will cause on the Natural Habitat.

NEW RESIDENTS

Jack Hobart - age 43 - Jack is an avid boater and would like to see this beach area developed so he can live close to the water.

Al Perry - agee 22 - Al would jump at the chance to rent a one bedroom apartment on the beach because he loves to go water skiing.

Roger Petree - age 26 - Roger is a lawyer and has just moved into the area and this beach development would certainly help his growing business, besides it would be nice to live on the beach where his wife could develop her suntan.

Larry Nelson - age 66 - Larry has spent the last 40 years working in the cold north. Now the time has come for Larry and his wife to relax and enjoy retirement. A condominium on the beach is the answer to his dreams.

Mel Winestock - age 38 - Mel and his family moved into this community because of their previous vacations they realized that this type of climate was the best for them.

FAVORS BEACH DEVELOPMENT

Joe Brucker - age 32 - He represents Holiday Inns of America. They would like to construct their new 18 story motel with the revolving restaurant and lounge on top. Hopefully they can bring in top name entertainment.

Craig Duncan - age 23 - Craig is a hard working industrious person that has managed to establish a chain of concession stands along beach areas in other parts of the state. Since the beach development would be new, Craig has plans for a new concession complex that would include a place for the local teens to dance to the latest rock bands.

Jan Taylor - age 27 - Jan is a representative of Recreations of America. This company is involved in the sale and rental of all types of beach equipment.

Sam Johnson - age 47 - Sam owns 2 other Marina's in the state and would like to build another one as part of this new beach development.

Brett Jamison - age 34 - Brett is a lawyer and is representing Cal Henderson at this zoning board hearing. Cal is President of and owner of Condominiums Unlimited. Cal and his associates have plans for an 850 unit complex on this beach area. Since Cal just bought this beach area, he feels that the zoning board should grant his request for a zoning change. Brett has been instructed by Cal to tell the board he is prepared to file suit against the city if the zoning isn't changed.

OLD RESIDENTS

Joe Bunger - age 39 - Joe is a commercial fisherman, lived here all his life, and sees this development as a danger to his business. All this dredging is going to destroy the sea life that he depends on for a living.

Mary Wayne - age 53 - Mary is an artist and has spent her lifetime painting the different scenes of the beach area. Mary loves nature and paints it to show the world its beauty. This development is going to destory all of that.

Andy Boyd - age 31 - Andy is a conservative. He does not favor change of any kind

OLD RESIDENTS, con't

Jim Monaldi - age 33 - Jim is married and has 2 children. He enjoys taking his family camping, especially on this beach area, because so few people use it. This development is going to ruin Jim's weekends of camping and fishing.

Janet Wynn - age 24 - Janet is a naturalist. She loves the outdoors and it is obvious what this development is going to do. She is fired up about this issue and has organized voters against it.

BEACH VISITORS

George Spencer - age 53 - George is a tourist and has been coming here for years because of the lack of development. The beach is unspoiled and he likes it that way.

Marge Fortley - age 64 - Marge is a sea shell collector and depends on this to add to her retirement income. She collects the shells and makes things out of them to sell. This development will prevent her from doing this.

John Noll - age 18 - John is a surfer and once this beach is developed the influx of tourists will make it too crowded to surf. He is opposed to any development.

Barbara Miller - age 19 - Barbara is a single girl attending the State University. She enjoys coming to this beach on her time off from college. If it is developed it would spoil the peace and quiet that she has enjoyed up till now.

Jake Holmes - age 17 - Jake attends the local high school and is opposed to any development of this beach.

ROLES -- ZONING BOARD

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Mel Winestock - age 38 -
Mel and his family moved into this community because on their previous vacations they realized that this type of climate was the best for them.

Roger Petree - age 26 - Roger is a lawyer and has just moved into the area and this beach development would certainly help his growing business, besides it would be nice to live on the beach where his wife could develop her suntan.

ROLES — FAVORS BEACH DEVELOPMENT

Joe Brucker - age 32 - He represents Holiday Inns of America. They would like to construct their new 18 story motel with the revolving restaurant and lounge on top. Hopefully they can bring in top name entertainment.

Sam Johnson - age 47 - Sam owns 2 other Marina's in the State and would like to build another one as part of this new beach development.

Craig Duncan - age 23 - Craig is a hard working industrious person that has managed to establish a chain of concession stands along beach areas in other parts of the state. Since the beach development would be new Craig has plans for a new concession complex that would include a place for the local teens to dance to the latest rock bands.

Jan Taylor - age 27 - Jan is a representative of Recreations of America. This company is involved in the sale and rental of all types of beach equipment.

Joe Bunger - age 39 - Joe is a commercial fisherman, lived here all his life, and sees this development as a danger to his business. All this dredging is going to destroy the sea life that he depends on for a living.

Jim Monaldi - age 33 - Jim is married and has 2 children. He enjoys taking his family camping, especially on this beach area, because so few people use it. This development is going to ruin Jim's weekends of camping and fishing.

Mary Wayne - age 53 - Mary is an artist and has spent her lifetime painting the different scenes of the beach area. Mary loves nature and paints it to show the world its beauty. This development is going to destroy all of that.

Janet Wynn - age 24 - Janet is a naturalist, She loves the outdoors and it is obvious what this development is going to do. She is fired up about this issue and tends to organize voters against it.

Andy Boyd - age 31 -
Andy is a conservative. He does not favor change of any kind.

ROLES - BEACH VISITORS

George Spencer - age 53 - George is a tourist and has been coming here for years because of the lack of development. The beach is unspoiled and he likes it that way.

Barbara Miller - age 19 - Barbara is a single girl attending the State University. She enjoys coming to this beach on her time off from college. If it is developed it would spoil the peace that she has enjoyed up till now.

Marge Fortley - age 64 - Marge is a sea shell collector and depends on this to add to her retirement income. She collects the shells and makes things out of them to sell. This development will prevent her from doing this.

Jake Holmes - age 17 - Jake attends the local high school and is opposed to any development of this beach.

John Noll - age 18 - John is a surfer and once this beach is developed the influx of tourists will make it too crowded to surf. He is opposed to any development.

CASE STUDY - HURRICANE ALICE

CONTENTS

1. Case Study - Hurricane Alice
2. Secondary State Standards
3. Information Resource Agenda
4. Strategy Game - Evacuate
5. Strategy Game - Save a Life
6. Science Center Flyer - "Hurricanes!"
   (video taped - May 13, 1974)

SUPPLEMENTARY ACTIVITIES

7. Draw a cartoon and poster.
8. Draw a map of the area surrounding your home.
9. Research the history of two of the worst hurricanes on the East Coast.
10. Track hurricane Camille of 1969.

CASE STUDY

HURRICANE ALICE

In the North Atlantic latitudes just north of the equator, stretching from the west coast of Africa to the Caribbean, are thousands of miles of hot, almost windless seas. This area, affectionately called the doldrums, by some, is the birthplace of a source of potential natural disasters called hurricanes.

You are about to follow the birth, life and ultimate death of a destructive hurricane named Alice. Hundreds of rain storms are generated in the thousands of miles of water called the doldrums. Here Alice was born, no one knows why, in any one year, five to ten storms are built up into hurricanes. Alice, however, begins a counterclockwise spin forming North of the equator. As the baby hurricane rotates its spin it develops great amounts of energy, controlled by a center called the eye. The eye of a hurricane is a fascinating phenomenon to observe, in that the storm rages for hours and then suddenly stops. A calm blue sky hangs overhead, the waters about you seem to stop in movement. Looking in all directions Hurricane Alice and its fury engulfs the atmosphere about you with a fear striking uncontrolable force in the image of clouds. You are now in a whirlpool with revolving winds of a 175 miles per hour.

Alice is now considered a hurricane by weather scientists who have tracked her since her inception the day before. Revolving in a direction towards the Caribbean, the hurricane towers to an altitude of 32,000 feet and spreads its direction to almost 200 miles in width.

To a great degree many things are known about Alice and her violence, except in what direction will she take. Like many women Alice is unpredictable in that she may swing towards Central America or hit Texas. But in a matter of an hour she heads in an eastly direction on a direct path to Florida. The land of sunshine, orange juice, and the inevitable prediction that during the months July, August, September, and October a hurricane watch season prevails.

Sweeping over the Gulf of Mexico in a northeasterly direction Alice hits the southwestern coast of Florida. Hitting with tremendous energy almost at times equal to nuclear power. Later, Florida cities look like the bombed out Eurorean cities of World War II.

Now traveling northeast and mostly over land Alice begins to lose her energy being cutoff from her ocean energy supply. Alice continues on her destructive path northeastly up the coast and out over the Atlantic Ocean. Over the New England coast Alice changes direction further into the North Atlantic Ocean. Losing force and energy Alice mellows down to a rain-storm. Scientific weather research teams will tell you that the end for a hurricane comes when she reaches colder water or colder atmospheric conditions.

Lets stop at this point and go back to the land of sunshine and orange juice. Specifically we focus in on St. Petersburg, Florida.

This city is surrounded by low coastal flooding beaches and land. To the North or South of St. Petersburg, cities and towns, also touch the waters of the Gulf of Mexico, or find a great percentage of its land elevation below the surrounding water tables.

As we fly over the county of Pinellas, we see a completely different picture of what was a county that attracted lovers of sunshine and orange juice.

Much to our horror we are witnessing the devastation of life and land hit not by bombs, but by the force of an energy driven rainstorm called Hurricane Alice.

SELECTED ACTIVITIES:

1. What did the first evacuation team see flying over St. Petersburg, and all of Pinellas County?

2. Now explore all resources to find maps that would give low-level elevations of the county.

3. In studying the map or maps what definite observations could be made in elevations, evacuation routes, and its location to tracking hurricanes reaching the Caribbean or Gulf Waters.

4. In reviewing the force of energy found in hurricanes what affect would it have on concrete building developed on finger styled canals?

5. Describe in a letter to a friend in North Dakota, the devastation you have witnessed. Your writing must be authentic and vivid in description to let your friend realize the trauma of a hurricane experience.

SECONDARY STATE STANDARDS

STATE SECONDARY SKILLS USED IN UNIT:

GENERALIZING - X-4. 279 - level 2a

Natural Resources - X284 - level 1b

Spatial Relations - X-4 286 level 3b

Human Differences - X-4. 288 level 2c

Human Behaviors - X-4. 289 level 2c

Political Power and Action - X-4. 291 level 2c

Social Inquiry - X-4. 303 level 2f

Data - X-4. 304 level 1g

Hypothesizing and Generalizing - X-4. 307 level 3g

Academic Disciplines - X-4. 309 level 3g

HURRICANES INFORMATION RESOURCES AGENDA

RESOURCES TO BE CONTACTED

1. U. S. Coast Guard Public Information Officer - St. Petersburg Bay Station.
2. McDill Air Force Base - Public Information Offices - Tampa, Florida
3. A. Pinellas County Civil Defense Administrator
   B. St. Petersburg Civil Defense Administrator
4. Science Center of Pinellas County.
   Video Tape Librarian (see flyer enclosed)
5. St. Petersburg Times Research Department
6. St. Petersburg Fire Dept. - Speaker
7. St. Petersburg Fire Dept. - Films on Hurricanes & Civil Protection
   St. Petersburg Police Dept. - Lecture & Films

A. V. MATERIAL REQUESTED

1. Video Tape Machine
2. Video Monitor
3. Video Camera
4. 3mm S. R. Camera
5. Instamatic Camera
6. Slide Projector
7. 16mm Projector
8. Audio Tape Recorder

Norman Loscalzo

STRATEGY GAME

EVACUATE

1. In case of evacuation make a list of necessities that you must take with you from your home.
2. You are limited in what you can take, to what you can carry on your person, however, not in a car or truck.
3. What can you do to prepare yourself prior to a natural disaster.

NECESSITIES

PRIMARY	SECONDARY

THE SCIENCE CENTER

PRESENTS

A Most Timely Topic

HURRICANES!

FREE

A LECTURE-FORUM

SPONSORED BY

THE NATIONAL SCIENCE FOUNDATION

-- PANELISTS --

DR. NEIL FRANK, Director National Hurricane Center, Miami

DR. BERNARD ROSS, University of South Florida

MR. LYLE FOX, Director Civil Defense, Pinellas County

MODERATOR:

ATT'Y HERMAN GOLDNER, Former Mayor of St. Petersburg

SCIENCE CENTER AUDITORIUM

7701 - 22nd AVENUE NORTH

MONDAY, MAY 13, 1974

7:00 P.M. REFRESHMENTS in our White Gardens

8:00 P.M. LECTURE-FORUM

Norman Loscalzo

STRATEGY GAME

PROJECT: SAVE A LIFE

HURRICANE EVACUATION PLAN

Due to the immense amount of work involved in preparing for the impending hurricane the following procedures will take precedence by state and federal order.

1. All adults beyond the age of 18 years will develop a program to save and preserve all necessary items to reconstruct the city after the hurricane passes.

2. To all teenages 13 years to 17 years of age; by order of President of United States and Governor of our state, this age group will set up an evacuation system for the citizens of Pinellas County.

3. All people of this age group will have police power to enforce embarkation procedures using all resources made available by local, state, and federal government.

4. Project will have immediate priority in acceptance after your group presents anevacuation blue book, code name "Project: Save a Life" to your director.

SUPPLEMENTARY ACTIVITIES

7. Draw a cartoon and make a poster illustrating the danger of being an apathetic public.

8. Draw a map of the four street area surrounding your home, including the safest evacuation route you could take.

9. Research the history ot two of the worst hurricanes to hit the East Coast.

10. Track Hurricane Camille of 1969, discussing the destruction and what reconstruction measures or laws are available to a distressed public.

CASE STUDY

HOW PUBLIC ARE OUR BEACHES?

Those of us who live in Florida frequently tend to take the ocean and white, sandy beaches for granted. What most of us don't realize is that only that part of the sand which is below the mean high water line is actually public property. We also often assume that we will always have access to the beach -- that is, that there will always be a public place to park our cars and an easement to walk through so we don't have to cross private property to get to the water.

An ordinance was recently passed by the Belleair Shores municipality in Pinellas County which states that parking at the public beach easements is prohibited to all but city residents. This poses a problem for anyone who lives outside of Belleair Shores but would like to use the beaches there. There is also a local ordinance which prohibits on-street parking on any city street. Since neighboring Belleair Beach has similar ordinances, a total of four public easements are closed to all but resident parking. These four easements control approximately one mile of beach.

Some Pinellas County residents claim that this is an attempt to restrict access to the beach and object to the ordinances on the grounds that any public access easements should be open to all the public, and not just residents of that city. Robert Shevin, the Attorney General of the State of Florida, has filed a lawsuit against Belleair Beach on the grounds that the city is violating a state law by restricting access to public beach. City officials from both Belleair Beach and Belleair Shores claim that they are only restricting parking, not access. In other words, any non-resident can use the beach as long as they don't park their cars on the easement or on the city streets.

Mayor Probot of Belleair Shores argues further that his municipality operates on a yearly budget of $9,000 and $6,500 of this goes for police protection. There would, therefore, be no money to provide maintainance of the beaches if they were open to the whole public of Pinellas County. At the three Belleair Shores easements there is only parking space for about 80 cars, so the mayor claims that they could only accomodate such a tiny portion of the county population that there is really no need for such a big fuss about the problem. The mayor's final argument is the fact that this land was donated by private citizens to the city for the specific purpose of providing public access easements for residents of the city and no one else. There is the real possibility that if the city is forced to open its access points to everyone the agreement with the land donors will be violated and the land will have to be given back to the original owners to do with as they please. If this were to happen, the original owners just might decide to build private homes on these sites, thereby eliminating any access to the water.

Since the residents of these municipalities are all within a few blocks of the ocean, is it fair to keep others from parking on their public access easements? If you and your father (who lost a leg in World War II) lived 3 blocks from the beach and it would be a severe strain for him to have to walk to the beach, should a special parking area be set aside for he and others like him? Can you imagine any other "special" cases?

If the beaches should be forced to open to all the public, is it fair to demand that the Belleair residents pay the cost of maintaining these beaches? If not, how will the money be raised? If so, how should they raise the funds (since the city budget does not provide enough money?) Some of the residents complain that beachgoers

CASE STUDY, con't. - Page 2

often bring blankets and picnic lunches into the residents' backyards -- that is, that portion of the beach which is above the mean high water line and is therefore private property. Is this a legitimate complaint? How would you feel if strangers had a picnic in your backyard? Does the same principle apply in both cases?

Should there be laws passed which demand public access easement every so many feet apart in a community? If so, what happens to the rights of the person who owns the property the city decides to take for the easement? If the courts decide to open these beaches to everyone and the property in Belleair Shores is returned to the original owners, should the owners be forced to sell the property to the county or state for public beach areas? How do you decide where private ownership rights end and the "common good" begins? Who determines what the "common good" is?

VOCABULARY

ordinance
easement
municipality
public access
mean high water line
"common good"

OBJECTIVES

Students will examine a case study pertaining to Beach access in Florida and will generalize the possible solutions to the resultant conflicts.
(X-4.279-L2a)

MATERIALS

Case study (tape or handout)
Discussion questions

PROCESS

Divide students into small groups. Ask each group to discuss problems and arrive at a group decision.
Spokesperson for each group will report to the class.

OPTIONAL ACTIVITY:

"ON THE BEACH" - a field trip to Beach

I. Directions to the Teacher:

This field trip is written with the schools in the beach areas in mind, however, as no school in Pinellas County is too far removed in travel-time or distance from the shoreline, this activity has been developed with the Objectives, Skills and Generalizations applicable to any school in the county interested in developing values and helping priorities to be changed, so that these Gulf Beaches will be restored and preserved for others to enjoy.

Set the stage for this beach study by reviewing quickly what will be expected for discussion on return to the classroom. Outline what we will be looking for (e.g. litter, plants, marine life, etc.) the data observed and recorded will lead to deductions and hypothesis concerning the function of this life and development our beaches.

Be sure each student brings pencil and notebook to jot down sketches and impressions he experiences along the way.

Establish the "Rules of the Road" the safety precautions that will bring the most enjoyment as well as the safest learning experience. (e.g. (1) stay with group (2) be observent - not destructive, (3) be courteous, group is judged by you.

Divide into groups. Appoint a Reader, who will read the questions as group goes along. Have a student bring a tape recorder to pick up spontaneous responses and this could be played back in the classroom upon our return. Perhaps one in your group might have a camera and could be the group photographer.

II. The Trip:

Introduction

Our Gulf beaches are teeming with lovely sights. They are alive with environmental interaction and change. To realize this - all we have to do is look! To help increase our awareness we are actually going on a trip to the beach. You will see, feel, listen, touch and smell the sea and sand. You will experience the wonders of it all - and the problems facing us to keep it in the natural state of loveliness. As we walk along the beach observe the exciting inter-relationship of plant and animal life along our shores, both on the land and in the water.

Then with our increased awareness and knowledge of the relationships between man and nature, we will be more respectful of the need to action to preserve these beach areas in their God made natural state and to build the man made necessary changes for progress from an expanded understanding and appreciation that our beaches are a distinct ecological setting -- an Ecosystem that functions for the benefit and enjoyment of all.

Student Handout:

Let's start with plant life along the shoreline. Who can tell me the names of some of these plants we are passing?

2. What do you think they do to the wind blowing across the beach?

____

The tall sea-oats, the sea grape and these Australian Pines, all protect the sand from blowing away or eroding back into the sea. It is illegal to pick the sea oats you know because it helps stabilize the sand dunes. This fruit of the sea grape can be eaten wien it gets red. Some people make jelly from this fruit. Watch out for that one -- you all know this plant, "Sand spur". Right, just feel it carefully! It spreads its seeds and grows abundantly along the sandy beache as we all know!

3. What else do these plants along the beach serve to do?

____

____

Now lets start noticing a few Birds. Look over there at a large Brown Bird flying just a few inches above the water. Notice his really big bill.

4. What is the name of this Bird?

____

5. Why does he dive into the water?

____

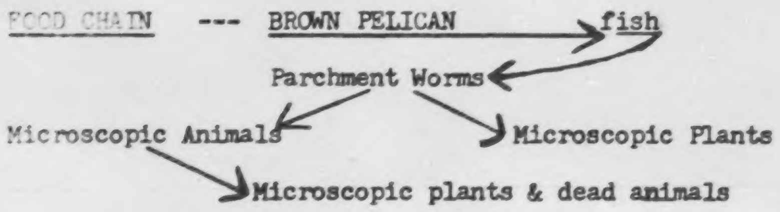
6. What is his bill so very big for?

____

Did you know that the Brown Pelican is one of Florida's "endangered species"?

7. Why? ____

The poisons in the pesticides causes them to lay eggs with thin shells. The beach Birds that have their habitat on our Gulf beaches are also loosing their nesting sites because of all the construction along the shore. Their food is being effected by these factors --


FOOD CHAIN --- BROWN PELICAN
fish
Parchment Worms
Microscopic Animals
Microscopic Plants
Microscopic plants & dead animals

8. Name some of the other Birds you see as we walk along the sand?

____

____

If you don't know the names of these Birds you are looking at ask the other in your group. See that little gray bird that runs in and out with the waves close behind them. These birds never seem to get their feet wet.

9. What is the name of this bird?

Now look at the other bird. He seems to be standing still in the sand while the wind blows the sand around him. He is fatter than the sandpiper and is white and gray in color. Its neck is short and its bill is shorter than its head.

10. What bird is this?

Birds are not only part of the food chain system along the beach, but are an important part of the beautiful seascape we love to go to for enjoyment and relaxation. Can you imagine a beach without "Jonathan".
Perhaps we could dig up some of the sand. Watch for movement to find any animals living under the sand.

11. What is the name of this animal?

If you walk along the beach with the incoming tide, you will find hundreds of Coquinas. This Coquina has his net inside the shell so he has to pass water into his shell through his net and then outside the shell again. As his net fills up, he rolls the sticky stuff from his net and eats it.
There then - coming from that hole you see a fiddler crab. Sneak over and lets spend just a few quiet minutes watching their strange behavior. Fiddlers play a very important role along the coastline. Hundreds of little fiddlers turn the dead matter into a form that Herons and other predators can use.

12. Can you see any other living animals along the beach?

Name some

So far we have been observing Natural environmental interaction and change. Take a look around you! You cannot help but notice the un-natural or man made development.

13. Walking along this beach list some of these you encounter:

Seeing some of the litter, makes you wonder what kind of people left it there. Jot down on this chart a record of the different types of litter. You will use this information back in the classroom for an Activity called "Startreck" (and for discussion later).

LITTER CHART

LOCATION	TYPE OF LITTER THAT YOU FOUND
Examples: on beach, near 13th St. access	Candy wrappers & coke cans

Finally, in our observation of Beach Development, note the abundance of multiple dwelling - both commercial and residental development. You see as we jog along some lovely private homes set back from the shoreline. However, in the 400 miles of coastline, there is - sorry a dense concentration of highrise structures right down near the shore. Actually, it is interesting to note that of this 400 miles, there is a 15 to 1 ratio of multiple to single family development along our beaches. There is 12.8 miles of Public Beach.

14. Look around you. What do you feel is very much in harmony with the environment?

15. What is in contrast to the natural environment?

16. What sounds please you as you saunter along the white sand?

17. What irritates or disturbes your sense of sound?

18. Reach down and feel the cool wet sand, feel the water tapping gently on your feet. What do you think of as you share the sights and sounds and scents of the beach?

19. What would you suggest to help restore the natural beauty of the beach?

20. Whom would you contact in order to implement these improvements?

OPTIONAL ACTIVITIES HANDOUT:

BACK TO SCHOOL:

Take the information you have gathered and the experiences you have shared and use it for the following activities:

1. Take a thermometer and measure the degree of heat in the classroom as contrast to the temperature on the beach. Discuss why this difference exists!?

2. Compose a skit, poem or song expressing your impressions of the beach area. (you may reinact in pantomine)

3. Pretend you are a member of the city planning commission. Role play a meeting for planning improvements to solve the problems you saw in your walk along the beach.

4. Recall some of the people you encountered along the beach. Project what you think they were feeling, seeing, hearing and what thoughts were in their minds as they walked along the beach.

5. Think back and consult your notes. What did you see along the beach that made you feel:

   happy ____________________ Why? ____________________

   sad ____________________ Why? ____________________

   inspired ____________________ Why? ____________________

   enthused ____________________ Why? ____________________

   proud ____________________ Why? ____________________

   free ____________________ Why? ____________________

   confined ____________________ Why? ____________________

   angry ____________________ Why? ____________________

6. Describe in a prose selection the visual impressions resulting from viewing the various Architectural designs and structures on the beach.

7. Class Dialogue and discussion groups concerning the observed interaction and inter-relationships they observed on the beach. Reconvene as a whole class and hypothesis (an educated guess) concerning the beach problems & environment. Based on your experiences and knowledge gained on the beach excursion discuss the man-made as well as Natural Changes on the beach. Now, use the data you collected to jot down some suggested improvements in the "Quality of Beach-life".

8. Invite a speaker from the "Beach Development" commission to discuss these suggested improvements and explain what is being done.

9. Show the slides taken during the workshop of the beach environment and have the students recall their own feelings and impressions -- then go on to project how this increased awareness of the beach growth and development will help in the preservation and improvement of our beaches.

10. The project of jotting down the litter you encountered along the beach is used here for a "Startrack" Activity explained below:

OPTIONAL STUDENT HANDOUT:

We have been talking about litter on the beach.

SpaceVisitors to our beach.

STARTRACK - EARTHBOUND:

Before giving students any further information on the activity, instruct each student to collect 3 pieces of litter from a city block.

Tell them they will be used for an activity in the classroom, but give them no further direction.

Next have them spread all 3 pieces before them on their desks.

Each student is a space scientist who has landed on a strange beach on another planet.

The 3 items found will indicate that there is life on the planet.

Problem: Assuming no more information than the litter provides, draw as many conclusions as to the size of the species, what they might look like, what they eat, drink, where they live, what is their level of intelligence; what might be their physical attributes, looking at your findings what weaknesses may be attributed to their physical behavior.

RESOURCES:

Materials = 1) Man-Nature - City by T. Sudia
2) Coastal Encounter by D. LaHart
3) Environmental Educational materials - Lee County Schools
4) Design with Nature - I. McHarg

People - Rod Allen - Ed. Dept., F. S. Univ.
Jim Jones - Largo Senior High
Steve Woolard - State Consultant Bureau of Environ. Ed.
Steve Peacock - County Environmental Planning Comm.

INTRODUCTION

Floridians currently face one of the most serious crises in the history of this state. Phrases like "population cap" have struck dramatic responses from native Floridians and potential settlers. This unit is designed to provide a foundation for study in the area of land use regulation through zoning.

Pinellas County is an example of a county which has become completely urban. Like most metropolitan areas of Florida, it has witnessed changes which threaten the very features which have attracted permanent settlers. Carelessness, lack of foresight and planning, and the selfishness of individual interests are destroying our state. Perhaps this unit can, in some measure, awaken interests, restore the perspective that is being lost, and broaden the base of citizen participation in zoning decisions. This might be done through acquainting students with the problem, confronting them with the issues, asking them to make value judgments after considering factual evidence, and having them offer plans for positive action.

GLOSSARY

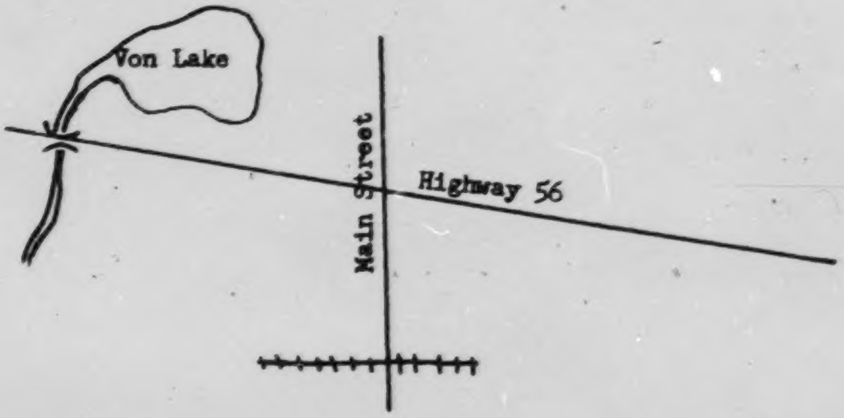
ZONING -	plan that limits certain areas within a community for particular types of buildings or businesses
DENSITY -	number of people living within a given area
URBAN -	having to do with the city
SUBURBAN -	areas near the city; usually residential
RURAL -	areas away from the city; usually agricultural
MEGALOPOLIS -	heavily populated urban areas formed by two or more cities growing together
ORDINANCES -	local community laws
MUNICIPAL -	having to do with the local community
METROPOLITAN -	large city including the surrounding areas
INCORPORATED AREA -	area granted permission by the state to become self-governing
GREENBELT -	area of open land (park land)
GHETTO -	residential area inhabited by an ethnic minority
EMINENT DOMAIN -	the power of the government to pay citizens for private property which is to be used by the public

WHY ZONE?

OBJECTIVE: The Student will make and justify zoning decisions based upon statements of fact and personal values. The students will accept facts and opinions offered by others and evaluate.(I-4.279-L2a)

MATERIALS: Back board (example: chalk or bulletin)
colored squares 2" x 2"

PROCESS: Copy the following diagram on the back board:



Give each student a colored square.

Ask the students what the community should contain. Ask the students where these "structures" should be placed. Have students label their colored squares to represent the structures and place them on the map. (example: recreation area located next to the school facility. . ?)

After all students have placed their squares on the board ask students to evaluate the location of the different structures. Ask students why zoning might take place.

Allow students to re-order the town they have created and state reasons for any changes which are made.

Discussion to follow permits students to evaluate their own city's growth.

NEIGHBORHOOD WALK

OBJECTIVE: The student will identify and give example of the eight major divisions of county zoning (X-4.294-1_c)

MATERIALS: None

PROCESS: Ask the students to copy the following chart[1], leaving "examples" column blank

ZONING

Divisions of Pinellas County

TYPE	DEFINITION	EXAMPLE
1. Residential a. single family b. duplex c. apartment	homes	
2. Commerical	stores	
3. Manufacturing	factories	
4. Agricultural	farms	
5. Right of way/Utilities (public)	RR tracks power lines	
6. Public/Quasi	schools	
7. Recreation/open space	parks/beaches	
8. Vacant	unused	

Using the school as a center, lead students on a walk of the area. Have students note examples of the zoning divisions.

Using the information gained on the neighborhood walk, have students construct a map of the area which would illustrate their findings.

Using their home as the center, have students repeat the above process.

---

[1] Comprehensive Land Use Plan for Pinellas County, Pinellas County Department of Planning, February, 1973, pages 9-15.

POPULATION DENSITY - MAP SKILLS

OBJECTIVE: Students will locate areas of their county where high and low population density occur. Students will speculate as to zoning needs in an given area. (X4.279-L2a) (X-4.279-L2a)

MATERIALS: Chart: Densities by Census Tracts
Pinellas County - 1970

Census tract map of Pinellas County
(overhead transparency or handout)

PROCESS: Show chart and discuss catagories and how they are to be read.

Students will agree upon legend and color in each tract to indicate population density per acre. This may be done on individual maps or as a group activity on a transparency

LEGEND

Pinellas County Census Tract Map	
☐	Under 2.00
☐	2.00 - 4.99
☐	5.00 - 6.99
☐	7.00 - 9.99
☐	10.00 and over

For use with Pinellas County map

Density per acre

DISCUSSION QUESTIONS:

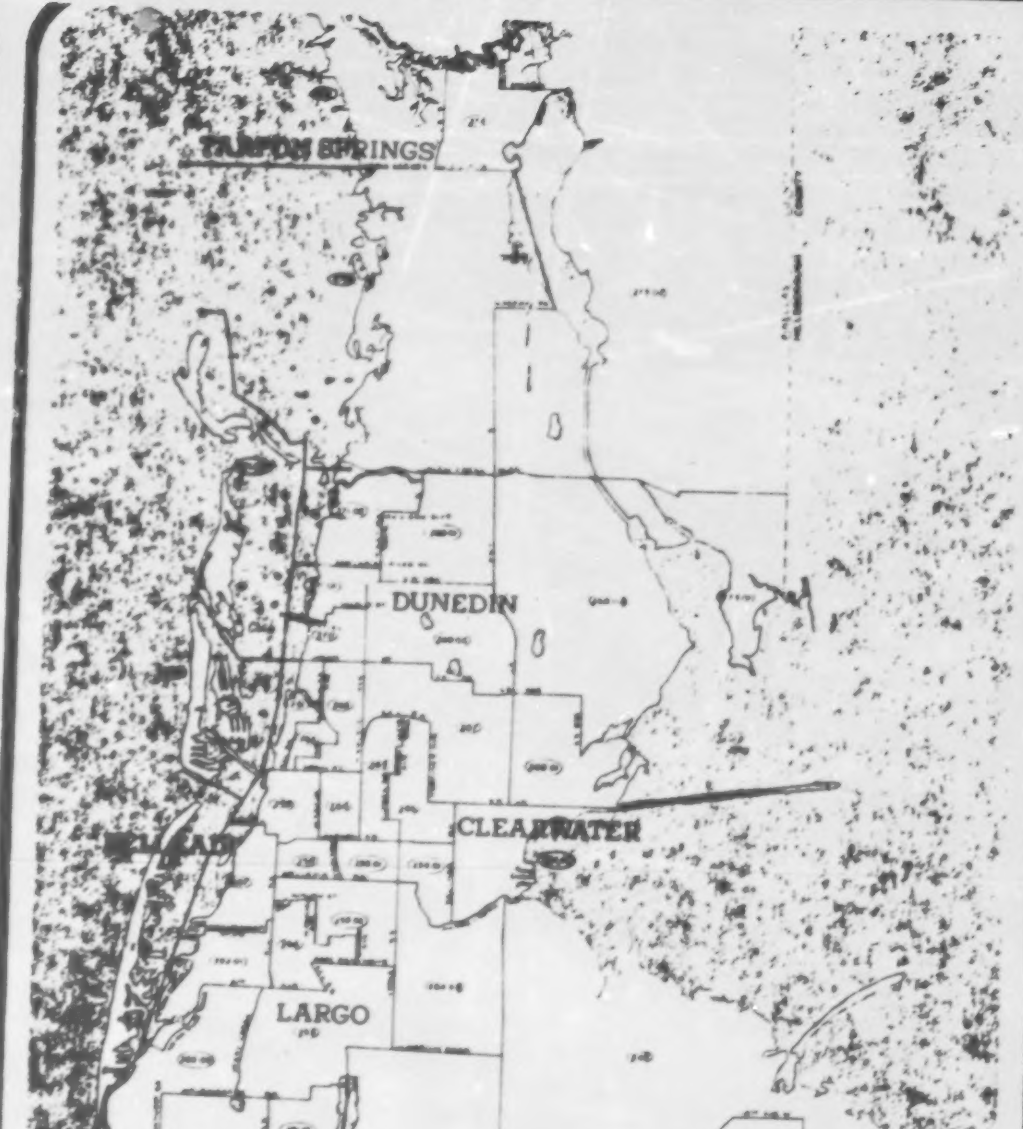
Why do high and low density areas occur? What causes people to be attracted to certain areas and avoid others? List these causes.

Do all high density areas have the same characteristics?

NOTE TO TEACHER: Care should be taken not to over generalize the characteristics of a high density area. For example, All high density areas do not experience "high crime rates."

On the map locate existing schools, malls, parks and recreation areas, industrial sites, transportation facilities, waterways.

Based upon these observations, what would you recommend for plans for future growth?


TARPON SPRINGS
DUNEDIN
CLEARWATER
LARGO
PINELLAS PARK
ST. PETERSBURG

DENSITIES BY CENSUS TRACT-1970

Census Tracts	Acres	Population	Density Per Acre	Density Per Sq. Mile	Persons Per Household
201.01	715	3186	4.5	2854.4	2.2
202.02	2197.43	2934	1.3	857.6	3.0
202.01	1924	3248	1.7	1081.6	3.1
202.02	488	3252	6.7	4262.4	2.7
202.03	1458	5743	3.9	2521.6	2.5
203	989	6238	6.3	4038.4	2.3
204	369	2407	6.5	4172.8	1.7
205	400	3692	9.2	5907.2	1.5
206	480	5714	11.9	7616	3.1
207	640	6785	10.6	6784	3.5
208	601	3876	6.5	4128	2.0
209	480	5986	12.5	7980.8	3.0
210	286	4285	15	9587.2	2.8
211	160	2315	14.5	9260.8	2.2
212	320	5666	17.7	11334.4	2.7
213	420	1669	4	2540.8	1.0
214	194	2669	13.8	8806.4	1.2
215	336	4011	11.9	7641.6	1.3
216	160	2118	13.2	8473.6	1.9
217	210	1345	6.4	4096	1.6
218	238	2426	10.2	6521.6	1.9
219	399	2395	6	3840	2.0
220	446	2965	6.7	4256	2.2
221	546	4420	8.1	5184	1.9
222	555	3902	7	4499.2	2.0
223	1130	6363	5.6	3603.2	2.5
224.01	587	4404	7.5	4800	2.7
224.02	1194	6525	5.5	3494.4	2.9
225.01	718	4179	5.8	3724.8	2.8
225.02	523	3823	7.3	4678.4	2.7
225.03	720	5968	8.3	5305.6	3.0

Census Tracts	Acres	Population	Density Per Acre	Density Per Sq.Mile	Persons Per Household
226.02	540	4800	8.9	5688.32	2.7
227	600	3453	5.8	3686.4	2.2
228.01	500	3229	6.5	4134.4	2.1
228.02	400	2742	6.9	4390.4	2.0
229	1014	4484	4.4	2828.8	1.9
230	400	3240	8.1	5184	1.9
231	211	1661	7.9	5036.8	2.1
232	321	2743	8.6	5472	1.8
233	294	2601	8.9	5664	1.9
234	211	2461	11.7	7462.4	1.5
235	330.58	3942	11.9	7628.8	1.3
236	236	3695	15.7	10022.4	1.3
237	283	2933	10.4	6630.4	2.1
238	287	2462	8.6	5491.2	1.8
239	311	2036	6.6	4192	2.0
240.01	632	3255	5.2	3296	2.4
240.02	835	3390	4.1	2598.4	2.4
240.03	1014	5465	5.4	3449.6	3.1
241	480	3899	8.1	5196.8	1.8
242	710	5257	7.4	4736	2.4
243.01	494.03	4371	8.9	5664	2.6
243.02	548.21	3947	7.2	4608	2.5
244.01	2057.85	6515	3.2	2028.8	2.4
244.02	4904.50	6621	1.4	864	2.6
245	13840.21	4928	.4	230.4	2.4
246	1645.55	6776	4.1	2636.8	2.0
247	1121.21	6409	5.7	3660.8	2.1
248	1551.88	10070	6.5	4153.6	2.4
249.01	1022.04	4166	4.1	2604.8	2.5
249.02	2047.75	5589	2.7	1747.2	2.5

Census Tracts	Acres	Population	Density Per Acre	Density Per Sq.Mile	Persons Per Household
249.03	1171.35	10201	5.8	3686.4	3.1
250.01	1110.19	6254	5.6	3603.2	2.0
250.02	8157.02	11934	1.5	934.4	3.2
251.01	946.74	5213	5.6	3564.8	2.1
251.02	1253.44	6476	5.2	3308.8	2.1
251.03	1422.40	6468	4.6	2912	2.7
251.04	2321.39	6783	2.9	1868.8	2.4
251.05	3294.76	6211	1.9	1209.6	2.8
252.01	1386.59	8163	5.9	3769.6	2.3
252.02	2605.14	7833	3	1926.4	2.8
253	3267.22	6698	2.1	1312	2.7
254.01	739.21	4922	6.7	4262.4	2.8
254.02	1865.01	8084	4.3	2771.2	2.1
254.03	3339.76	9087	2.7	1740.8	2.6
255.01	567.49	3829	6.8	4320	2.6
255.02	1483.93	7054	4.8	3040	2.7
256	1047.75	7077	6.8	4320	1.9
257	1118.46	3013	2.7	1721.6	2.4
258	523.43	3653	7.	4467.2	2.5
259	822.77	4548	5.5	3539.2	2.1
260	866.85	5067	5.9	3744	1.7
261	517.91	4226	8.2	5222.4	2.0
262	283.75	3808	13.4	8588.8	3.1
263	1009.18	5420	5.4	3436.8	2.4
264	607.90	4265	7	4492.8	2.0
265	935.72	5615	6	3840	2.6
266	1199.26	5778	4.8	3084.8	2.4
267	2873.28	7024	2.4	1561.6	2.5
268.01	2343.43	4122	1.8	1152	2.6
268.02	8255.27	5768	.7	448	2.6

Census Tracts	Acres	Population	Density Per Acre	Density Per Sq.Mile	Persons Per Household
269.01	3314.97	3422	1	659.2	2.2
269.02	3010.10	6107	2	1299.2	2.1
270	674.01	4129	6.1	3923.2	2.0
271.01	525.25	3314	6.3	4038.4	1.7
271.02	1572.08	6122	3.9	2489	2.4
271.03	11.94	194	16.3	10398	1.3
272	9640.95	7398	.8	492.8	2.2
273.01	2441.69	1544	.6	403.2	3.0
273.02	27447.18	1529	.1	356.48	2.5
274	1778.69	3826	2.2	1376	2.8
275	2408.63	3292	1.4	876.8	2.6
276		3742			2.0
277		4875			1.8
278	518.16	4159	8	5139.2	1.8
279	857.70	6120	7.1	4569.6	2.0
280	1285	8024	6.2	3993.6	1.8
281	1172.68	4674	4	2553.6	1.9
282	348.86	2673	7.7	4902.4	2.5
283	38.11	3620	6.7	4307.2	2.2
284	197.43	1301	6.6	4217.6	1.6
285	351.70	2136	6.1	3884.8	1.8
Pinellas County	179,314.2	522,329	29.1	1,813.6	2.3

HANDOUT 1

"FOR YOUR PROTECTION, HEALTH, SAFETY, AND PRIVACY. . ."[I]

There are a great many rules controlling our environment written for our physical well-being. In fact, most of the rules we will work with in building and changing our environment were written to protect us from physical harm. They are collected in rule books such as Building Codes, Fire Codes, Anti-Pollution Laws and Traffic Regulations.

We want these safeguards. They protect us as much as they protect others and usually we're glad we have these laws.

But we have to expect that any law that protects us may restrict us as well. Most of the time this is no hardship because we wouldn't do otherwise even if we could.

However. . .there's another kind of protection we look for in our environmental laws.

We all have our own ideas about what kind of neighborhood we want to live in. Some things which go against these ideas really bother us, maybe even frighten us. For example, most people would get pretty upset if a factory were to be built next door to their home. A great many people even get upset if anything but houses--the same kind of houses they live in--are built in their neighborhood. These aren't the same kind of fears as our fear of fire or physical harm, but to the people involved, the problems can be just as real. For protection against these fears, zoning laws were written.

Zoning laws are different from the laws written to insure our buildings are safe. To begin with, they change as people's attitudes about their environment change.

Secondly, zoning differs from place to place, reflecting what the people who live there are used to or expect.

Third, these laws are not very complete. Usually they protect us from the things we fear the most. The amount of protection they provide, often depends on how strong our fears are.

Any final zoning laws are not as easy to test as other environmental structural building laws. They're all tied up in our feelings and judgments, our attitudes and prejudices. They express our anxieties about the value and care of our property or who our neighbors might be, where they come from, or the color of their skin.

This can result in controversy, argument, and legal battles. No one seems to bother much with all of these codes but if the issue is zoning every side jumps in and each one is sure they are right.

FOLLOW UP ACTIVITY:

Consider some of the cases concerning: Law and the City from Justice in Urban America Series, pages 99-104.

[I] Based upon The Process of Choice, Book III, The Group for Environmental Education, M.I.T. Press, 1973

OTHER SUGGESTED ACTIVITIES

1. Visit to County Commission meeting
2. Guest speakers - could include real estate appraiser, county planner, county or city commissioner
3. Films - the following are to be found in the County Media Center

A City is to Live in	309.26	24 Min.
A Dilemma in B & W	309.26	54 Min.
To Build the Future	309.26	54 Min.
Cities of the Future	309.26	25 Min.

4. Student-made audio visual presentations (slide/sound; film)
5. Polls and questionnaires
6. Dilemma or models
7. Cartoon interpretations
8. Journals relating to land use articles found in newspapers
9. Picture interpretations
10. Simulation games - example "Boom Town"
11. Personal interviews
12. Map reading and drawing
13. Research papers - possible topic would be the following planned communities:

    Deltona
    Brazilia
    EPCOT
    Greenbelt, Md.
    Coral Springs, Fla.
    New Delhi
    Walden I and II
    Reston, Va.

WHO ARE THE ZONING BOARDS?

OBJECTIVE: Students will examine the political structure of Zoning Boards in Pinellas County and evaluate their power and degree of effectiveness in zoning decisions: (X-4.294-1c)
(X-4.284-L16)
(X-4.305-L2g)
(X-4.288-L2d)

MATERIALS: Charts, Discussion Questions

PROCESS:

1. Review specialized vocabulary
2. Present chart,discuss major points utilizing suggested discussion questions (Teacher will prepare similiar charts for local community, if needed, or assign research project for selected students.)

Suggested Discussion Questions

1. List the advantages and disadvantages to the public of an appointed vs an elected Zoning Board.

2. Most decision-making groups are always an uneven number. Why would this make the decision making process easier?

3. Some local Zoning Boards serve without payment. What types of problems could result from this situation?

4. How could we evaluate the job these board members are doing? (Before you start decide what a "good job" is.)

5. Often a Zoning Board is accused of "accepting graft" (bribes offered by a party to influence a decision.) Examine the chart and decide if the political makeup of the Commission could easily get into trouble in this way. How could we help this not to happen?

TEACHER NOTES: (A) Explore the feasibility of opening your class to local community speakers in any of the following areas:

A. Real Estate sales
B. Local Zoning Commission
C. Chamber of Commerce official
D. Tourist Bureau

(B) Class visit to Zoning Board meetings or work sessions.

HANDOUT 2

Pinellas County Zoning Commission
(County Commission)

5 Members
$12,000 yearly salary
Elected
2 year term
Final authority on all decisions. Has advisory office (Zoning Dept) to deal with paperwork and procedures.

City of Clearwater Zoning Chart

9 Members
no compensation
appointed by Mayor
3 year term
no authority - advisory role with recommendations to City Commission

My Community's Zoning Chart

OBJECTIVE: Students will participate in a class discussion to evaulate the emotional impact involved in the local zoning processes.

MATERIALS: Fact Sheet (tape or handout) (I-4.305-12g)

Discussion questions (I-4.279-12a)

PROCESS:
1. Review specialized vocabulary (glossary)
2. Present either on tape or handout the fact sheet
3. Involve students in discussion, either large or small group

Discussion questions

What type of zoning changes in your neighborhood would frighten or annoy your family? (ie - racial integration, commercialization, highway construction, etc.)

Your subdivision's homes cost $20,000 to $30,000 (3 bedroom, 2 bath) and are about 5 years old. On the 1st vacant lot the new family puts a 30' x 12' foot trailer. Would you object? How would most of the people in the neighborhood feel?

Look at the following list of businesses that are often found in or near residential areas. Rank them in order of desirability. "1" most desirable; "14" least desirable

___church
___ 7-11
___used-car lot
___school
___McDonald's
___cocktail lounge
___hospital
___sewage treatment plant
___fire station
___go-kart track
___service station
___day care center
___landscape nursery
___trailer park
___pool parlor

(This lesson suggests many off-shoot activities depending upon the age and reaction of the students)

Sometimes a zoning board will allow a business to open if they meet certain restrictions.

You are now on the zoning board. You will allow an electronics factory to build in your town but you set conditions:

Divide class into groups of four and list at least 5 conditions your factory would have to meet. Be sure to allow time for each group to present their conditions to the class

JANET'S DILEMMA

OBJECTIVE: Students will examine a case study describing the conflict inherent in city government's rezoning of residential areas (private property) for use by the general public (eminent domain) and evaluate the legality and justice of such decisions. (X-4.284-L16) (X-4.279-L2a)

MATERIALS: Case study

PROCESS: Have students read the case study below:

Janet has lived in her present home for 14 years. She attends a neighborhood school and has many friends who live in the area. Her family has a limited income and is happy to occupy this house because the rent is low. Janet's family also supplements their income by renting an adjoining garage apartment to another family.

Recently, however, the state has decided to put an interstate highway through the area and Janet's house lies in that path. Janet is only one of hundreds of families who face this problem.

Questions for Discussion

You are Janet:

How do you feel about this move?
What are some of the things that you will hate about moving?
What legal rights do Janet and her family have?

You are Janet's parents:

You've lost a part of your income--how will you make up this loss? Should the state compensate you for this loss?

You decide to go to court because you do not agree with the value the state placed on your property which they based upon the county tax assessor's evaluation. You say your property is worth $5,000 more than the state has offered. How can this conflict be resolved?

You are the renter:

The young couple who rented your apartment now are homeless. Do you feel the state has an obligation toward them? What alternatives do they have?

MIKE'S TREEHOUSE[1]

OBJECTIVE: Students will observe the film "Treehouse" and then respond to the following value awareness questions (X-4.284-11c) (X-4.279-12a)

MATERIALS: film "Treehouse" 9 minutes color King Film, 1971, Berkley available from Pinellas County Media Center

PROCESS: Have students describe on paper three incidents in their life when they didn't have any power to alter (change) orders.

Show film.

Discuss:

How was Mike's situation similar to your own (that you described before you saw the film?)

How did you think Mike's situation was going to end?

How do you think Mike can get power over his own situation?

Do you think he can save the tree or other trees in the future?

How do you think you could get power over your own situations you described before you watched the film?

Now, role play how you think the movie should end -- for Mike, for the bulldozer, etc.

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[1] Values Awareness Strategies for Middle School Social Studies Programs, Pinellas County School System, February, 1974, page 84.

HANDOUT 3

LAND USE-CLASSIFICATIONS:

RESIDENTIAL —Those areas devoted to the housing needs of the populace include one family, multi family and mobile home parks

- Low Density — 0-7.5 units per acre
- Medium Density — 7.6-15.5 units per acre
- High Density — 15.6-30 units per acre
- Residential Planned Development — contains low, medium or high density subject to site plan approval

COMMERCIAL —Identified as that area engaged in merchandising and services, including lodging places and professional services

MANUFACTURING —Includes those areas having establishments engaged in the change of substances into new products and described as plants, factories or mills

RIGHT OF WAY AND UTILITIES —Consists of areas identified for roads, highways and land having a semi-public character

PUBLIC/RECREATION —Those areas concerned with Public and Quasi-Public owned and operated enterprises

MAJOR URBAN ACTIVITY CENTER —High intensity areas of residential, commercial and supporting activities concentrated within a designated zone at a location supported by high capacity transportation networks

LAND USE ACREAGE

	Existing	1990	Ultimate
Residential	37.315	65.022	83.362
Commercial	4.500	8.406	10.077
Manufacturing	2.008	3.512	4.503
Right of Way Utilities	25.839	45.036	57.738
Public/Recreation	10.579	18.431	23.630
Agriculture	15.707	6.224	—
Vacant	83.362	32.679	—

TRANSPORTATION IN PINELLAS COUNTY

INTRODUCTION

This unit is structured for use in a five-to ten-day time frame. The unit is subdivided into five major sections, each of which contains required activities as well as a choice of alternatives or optional activities. The first section of this unit is designed to familiarize the student with the structure and locations of the Pinellas County transportation system. The second section helps the student to identify Pinellas County transportation problems and reasons for these problems. In the third section, the student will learn to recognize how change affects communities. The student will recognize conflicting individual and community needs in the fourth section. The fifth section provides the student with materials which will allow him to analyze alternative solutions to transportation problems. Included in the unit are master sheets of maps and activities which can be reproduced as transparencies and/or stencils for class distribution. Also available are color slides of the Comprehensive Land-Use of Pinellas County and of various transportation networks within the County for use in illustrating activity land areas in the Unit. The Objectives, Skills, and Generalizations, which are coded to State Accreditation Standards are arranged sequentially; i.e., the first sets of objectives, skills, and generalizations are keyed to the first set of activities.

OBJECTIVES

1. Familiarize students with roads used in their own locality (I-4.286-3b)
2. Familiarize students with the functions and characteristics of different types of roads (I-4.286-3b)
3. Recognize,identify and analyze transportation problem areas (I-4.286-3b)
4. Recognize relationships between population growth and mobility and current transportation capabilities (I-4.283-2a)
5. Recognize the impact of transportation on the quality of the environment (I-4.287-1c)
6. Recognize how solutions to transportation problems are affected by individual or collective value systems (I4.293-2c)
7. Recognize that conflicts occur because of differing value systems (I-4.294-1c)
8. Recognize that diverse forces come into play in community decision-making (I-4.291-2c)
9. Recognize alternative actions and their consequences in resolving controversial issues (I-4.297-2d)
10. Recognize the need to develop empathy towards divergent viewpoints and realize that these viewpoints are acceptable in a democratic society (I-4.295-2c)
11. Appreciate that transportation systems should be built to preserve or enhance the natural scenic beauty of the environment (I-4.284-1b)
12. Recognize the necessity of continous evaluation of transportation needs in light of future demands (I-4.311-1h)
13. Students should be encouraged to consider viable alternatives to current and future transportation problems (I-4.311-1h)

SKILLS

1. Distinguish fact from opinion (X-4.310-1g) (X-4.306-2g) (X-4.311-1h)
2. Collect and generalize from specific data. (X-4.307-3g)
3. Catagorize and rank-order date by its characteristics, functions, similarities, and differences. (X-3.210-1g) (X-4.306-2g)
4. Draw conclusions from data gathered from direct observations, interviews, and opinions. (X-4.307-3g) (X-4.296-2c)
5. Understand and apply statistics from various forms such as maps, graphs, and tables. (X-4.304-1g) (X-4.310-1g)
6. Interpret and analyze non-verbal resources. (X4.304-1g)
7. Verbalize perceived data in some coherent form. (X-4.310-1g)
8. Develop skills in empathy, debate. communication, interaction, and decision-making through role-play activities. (X-4.295-2c)
9. Apply imagination to resolve concrete problems. (X-4.307-3g) (X-4.295-2c)

GENERALIZATIONS

1. Society depends on some form of transportation network.
2. Adjoining population districts have unique localized wants and needs.
3. Movements of large numbers of people on a particular transportation system can offer certain advantages.
4. Traffic volume is a determining factor in deciding transportation needs.
5. Heavy traffic can be a critical problem in urban transportation.
6. Increased population puts heavier demands on existing transportation problems.
7. Diverse value systems can cause disagreement in resolving transportation problems.
8. Many diverse opinions are expressed in solving the transportation needs in a self-governing society.
9. The right of private ownership is a fundamental value held by participants in the American democratic process.
10. Public agencies, at times, exert the right of eminent domain when it is deemed necessary for the public welfare.

I. CHARACTERISTICS OF THE PINELLAS COUNTY ROAD SYSTEM

Activity #1 Roads and Community needs (15 minutes)

List under column A the roads that you and your parents use the most. Then under column B list the specific reasons for using the roads listed in column A. After you do this try to list some general reasons why people use and therefore need roads.

A	B
1.____________________	1.____________________
2.____________________	2.____________________
3.____________________	3.____________________
4.____________________	4.____________________
5.____________________	5.____________________
6.____________________	6.____________________
7.____________________	7.____________________
8.____________________	8.____________________
9.____________________	9.____________________
10.____________________	10.____________________

State 5 general reasons why you think people need roads.

Activity #2 Road Locations and Population Needs

(you will need a road map of Pinellas County) (30 Minutes)

A. Use your map key to identify five of the following road types that run closest to your neighborhood.

Two Lane	Four Lane	Six Lane
1.________________	1.________________	1.________________
2.________________	2.________________	2.________________
3.________________	3.________________	3.________________
4.________________	4.________________	4.________________
5.________________	5.________________	5.________________

B. Roads are built to meet population needs. List as many reasons as you can as to why you think some roads have more lanes than others.

1. In what direction do most of the major highways flow on your maps?________. Can you think of one reason why?________________

2. Trace on your map the roads that you would probably take if you traveled from your home to the following locations:

(a) St. Petersburg Pier
(b) Fort Desoto Beach
(c) Bay Front Center
(d) Busch Gardens, Tampa
(e) Sunshine Skyway
(f) Clearwater and Tampa Airports
(g) County Court House of
    (1) St. Petersburg
    (2) Clearwater
(h) Your school
(i) Nearest hospital
(j) The nearest bus station
(k) The nearest shopping center

Activity #3 Road Design Characteristics (20 Minutes)

You are traveling from Clearwater to St. Petersburg to reach your destination you will travel over the following types of roads: Interstate Highways, Down Town streets, and Neighborhood streets. Which of the following street characteristics would you see while traveling on these types of roads? Some characteristics can be used in more than one catagory.

Interstate Highways	Neighborhood Streets	Downtown Streets
1.________	1.________	1.________
2.________	2.________	2.________
3.________	3.________	3.________
4.________	4.________	4.________
5.________	5.________	5.________
6.________	6.________	6.________
7.________	7.________	7.________
8.________	8.________	8.________
9.________	9.________	9.________
10.________	10________	10________

Road Characteristics

1. Rest Areas
2. Houses
3. Congested Intersections
4. No Traffic Lights
5. Multi Story Buildings
6. Banks nearby
7. Very noisy
8. Sometimes Toll Charges
9. Curb Street Parking
10. No turn arounds except for emergency vehicles
11. Stop Signs
12. Many parts are elevated
13. Clover leafs
14. Side Walks
15. No Parking
16. High speed travel
17. Weigh Stations
18. No Intersections
19. Single Lane
20. Frequent Lights
21. No Parking Signs
22. Commercial Building
23. Garages and Parking Lots
24. Hotels
25. No Pedestrians or Bicycles allowed
26. Careful attention to exit signs

II. PROBLEMS FACING THE PINELLAS COUNTY TRANSPORTATION SYSTEM

Activity #1 Traffic Flow Survey (Home work project)

One way for you to determine whether roads in your community are adequate is to observe the flow of traffic. The following is an exercise in observation for later class discussion and comparison.

1. I am observing at the corner of ________________ and ________________

   City of ________________ From ________________ A.M./P.M.

   To ________________ A.M./P.M. on ____________ Month/Day)

2. Is your intersection busy Yes _____ No _________ Count the total

   number of vehicles that pass by you during a period of 60 seconds _____.

3. State two reasons why you think this intersection is or is not busy.

   A ____

   B ____

4. Count the number of business vehicles that cross your intersection

   within 60 seconds _________ Number __________ Specific Time ________

5. Count the number of cars that cross your intersection in 60 seconds

   ______________ Number ______________ Specific Time ______________

6. What time of day do you think this intersection will be most busy?

   ______________________ Why ____________________________________

7. Is your intersection very noisy? _______ Yes __________ No

8. Does your intersection seem to have a greater degree of air polution

   than other intersections? __________ Yes ___________ No

9. How many pedestrians cross the street within 2 minutes? _________

   _________ Number ___________ Specific Time

10. Does your intersection have stop signs or traffic lights? ____________

11. Count the number of cars with out-of-state licenses that cross your

    intersection within 60 seconds ________________

12. In which direction is the traffic flow most heavy? North-South ______

    East-West __________

Make a diagram of your intersection showing the type of buildings situated on your corner and the number of lanes.

N
W E
S (Place below diagram)

Conclusion: Does your
intersection meet community
needs?____Yes____No Why/Why Not

____

____

____

Activity #2 Traffic Problems Interview (Home work activity)

Interview your parents or two other people that drive. Ask them to list their greatest traffic problems and their locations. Be prepared to discuss and compare your answers with the rest of the class.

Optional Activities For You

1. You may want to take slides of various intersections to show some of the problems discussed in activity 5.
2. You may want to make a slide presentation of traffic problems in general.
3. You may want to make a tape showing noise pollution at intersections.
4. You may want to interview officials involved with traffic problems and planning.
5. Pinpoint traffic trouble spots by listening to morning or evening sky patrol broadcasts.

Activity #3 Statistics on Vehicle Registration and Sales (45 Minutes)

A. Make a graph comparing the following three counties in a 10-year growth period of vehicle registration and/or automative sales.

(1) Vehicle Registration

	Pinellas	Hillsborough	Pasco
1963	255,293	243,748	26,328
1973	472,809	411,701	86,605
Growth	85%	69%	229%

Source: Florida State Division of Motor Vehicles

(2) Automotive Sales

	Pinellas	Hillsborough	Pasco
1963	$119,543,000	$158,508,000	$5,640,000
1973	$457,380,000	$426,753,000	$37,332,000

Source: 1974 Sales Management Survey of Buying Power

B. What implications can you see from the following information?

(1) Auto registrations in Pinellas County indicate that there is one car for every 1.9 residents

(2) 40% of Pinellas households have 2 or more cars
52% have one car
8% have none

Source: St. Petersburg Times Market Growth Report 1974 - 1975

ACTIVITY #4 PICTURES CAN TELL A STORY (20 minutes)

Resource Materials: Music: "Downtown, Country Roads, 2001 Space Odyssey"
Films: "Automania"
Commercials: T.V. Film Clips, Magazines, Newspapers

The student or teacher will present a series of pictures, slides, or films which illustrate how the road system affects the quality of the environment. Th Filmstrip may be accompanied with music.

A. After the presentation you will write a paragraph describing how you fe about the slide presentation. Your presentation will be part of a clas discussion.

B. List the ways that the transportation system affects the quality of the environment.

ACTIVITY #5 A MATTER OF CHOICE (20 minutes)

Rank order the following suggestions for improvement of the traffic congestion problem in Pinellas County from most desirable to least desirable.

(Most desirable is Number 1)	Ranking
1. Abolish beaches	1.
2. Abolish cars	2.
3. Build a monorail system	3.
4. Widen present roads	4.
5. Prohibit downtown use of cars	5.
6. Use moving sidewalks instead	6.
7. Low cost bus transportation	7.
8. Establish helicopter service	8.
9. Establish motorcycle paths	9.
10. Expand bicycle routes	10.
11. Electric cars	11.
12. Car pools	12.
13. Gas rationing	13.
14. Shuttle busses to downtown	14.
15. Different street levels for different types of vehicles	15.
16. Hydrofoil boat system	16.
17. Subways	17.
18. High speed trains	18.

Now take your First Choice to estimate the following:

A. Cost in money and time (very expensive - not very expensive)
B. Does it solve the problem?
C. Reasons for opposition to your plan
D. The probable result if your plan was put into effect

III - PRIVATE PROPERTY RIGHTS VS COMMUNITY NEEDS

ACTIVITY #1 WHAT DO YOU THINK? (10 minutes)

Read the following questions carefully. Answer the questions with your personal judgments.

1. Should government be allowed to force owners of private property to sell their land?

_____________yes   _______no

Here are three good reasons for my position

1. ____

2. ____

3. ____

2. Are a whole community's needs more important than the needs of individuals in the community?

__________yes   ______no

Here are three good reasons for my position

1. ____

2. ____

3. ____

ACTIVITY #2 THE CASE OF MR. X VS PINELANES COMMUNITY - 20 minutes

Below is a statement made by Mr. X to the Transit Authority Commission stating the need for a high speed road.

> "A new road is necessary to eliminate congestion of Silverpoint Road. The new road would have to be constructed through the old and established residential area of Pinelanes. A majority of the home owners would have to sell their property in order to provide land for this road. This is necessary because public interests must take precedents over private interests. The fact has been established that tourism, commercial enterprises, and civil defense will be badly affected without the construction of this new road."

A. What is Mr. X's position?

____

____

____

B. What are Mr. X's reasons for supporting his decision?

____

____

____

C. How do you feel about Mr. X's decision?

____

____

____

D. What reasons can you give for your feelings about Mr. X's position?

What arguments would you use against the proposed new Highway if you were a resident of the Pinelanes community?

ACTIVITY #3 "TOM'S DILEMMA" (45 minutes)

Mr. Jones has worked hard all his life, put his children through college, made sacrifices, and saved his money. He has finally, at age 50, purchased some acres in the country for the construction of his dream home.

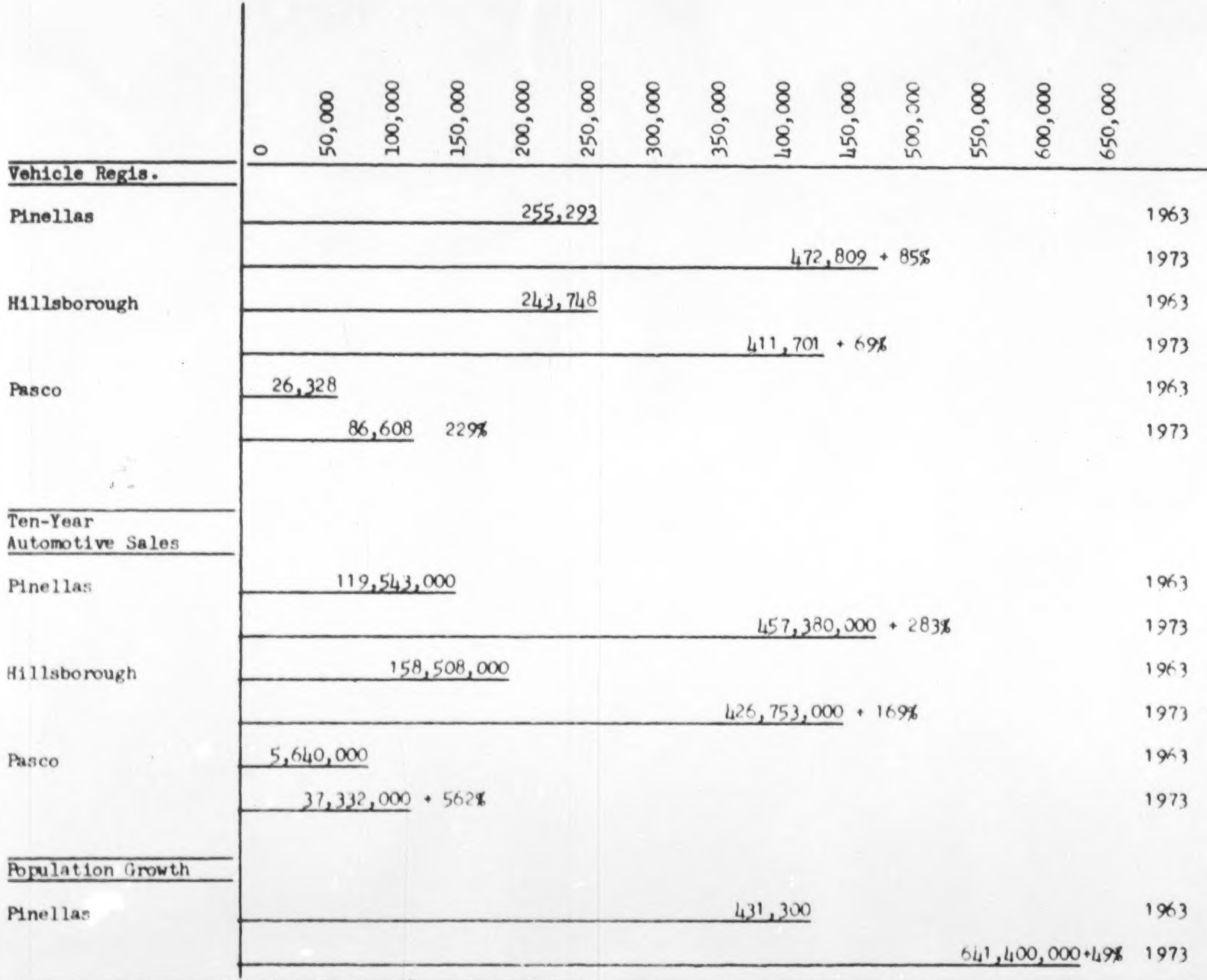
His son, Tom, majored in urban studies and landed a job as chief planner in the county department of transportation. After careful study he has decided that a new super highway is vitally important to the county. And, you guessed it, the best location would cut across his fathers new property fairly close to his father's house.

Tom's father is outraged at the news that his property is being considered for the highway site. He feels it would destroy the beauty of his country seclusion, not to mention the noise which would be well within earshot. Mr. Jones has threatened to disown Tom if he goes through with his recomendation robbing Tom of his future inheritance and his father's respect.

Tom does not want to cause heartbreak to his father but feels that the recommended location would best suit the county's needs.

ACTIVITY #3 - TOM'S DILEMMA QUESTIONS

1. What's going on here? (summarize the main facts of the case)
2. Find two conflicts
3. Restate the conflicts in terms of two opposing values
4. How would you express your feelings if you were Mr. Jones - Tom?
5. What do you think would be the "correct" decision for Tom?
6. Do you see any alternatives for Tom or Mr. Jones?
7. Predict what the consequences would be for the above alternatives?
   Example: How would relocation of the highway affect other people?
8. How might these alternative ideas be put into action?
9. What do you value the most - property rights or public rights?
10. What constitutional amendment or amendments apply to this case? Why?



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50,000
100,000
150,000
200,000
250,000
300,000
350,000
400,000
450,000
500,000
550,000
600,000
650,000
Vehicle Regis.
Pinellas
255,293
1963
472,809 + 85%
1973
Hillsborough
243,748
1963
411,701 + 69%
1973
Pasco
26,328
1963
86,608 229%
1973
Ten-Year Automotive Sales
Pinellas
119,543,000
1963
457,380,000 + 283%
1973
Hillsborough
158,508,000
1963
426,753,000 + 169%
1973
Pasco
5,640,000
1963
37,332,000 + 562%
1973
Population Growth
Pinellas
431,300
1963
641,400,000+49%
1973

IV TRANSPORTATION DECISION MAKING

ACTIVITY #1 - THE CASE OF BEACHVIEW BRIDGE (45 minutes)

Read the following case. Decide which of the given alternatives would be the best by looking at the consequences of each decision. Decide whether each consequence is positive or negative. You must base your decisions upon your own knowledge and values:

The Beachview city council has proposed development of a new bridge from the island area of the city to the mainland. The old bridge is single-lane and will no longer handle the amount of traffic flow. Location of the new bridge has created major problems.

The Safe Boating Club has suggested constructing the bridge near the Yacht Club because this would allow more citizens to have a better chance to utilize water facilities. The citizen's traffic committee is opposed to this location because of the congestion that might occur with the constant raising and lowering of the bridge. They feel this would create a hold-up in traffic movement.

The Real Estate Association has suggested that the bridge be located at the south end of the island because there is very little commercial or residential development there. Opponents to this location have said that real estate interests are concerned with trying to use the bridge as a means leading to future profits through development of the area. Environmentalists fear that location of a bridge there would lead to further ecological imbalance. Bridge construction would mean elimination of mangroves and a secluded bird sanctuary.

The city planning commission has suggested constructing the new bridge next to the old one, because this would eliminate the need for massive change in land use. The island business association is opposed to this location because it would mean that private property along the new bridge's location would have to be surrendered to the project. Many successful businesses are located along this proposed route.

The Beachview City Council must decide where the new location will be.

Directions:

Fill in the chart provided by stating the position of each opposing group, the possible alternatives, the consequences of those alternatives, the + or - value of each alternative, whether you would accept or reject those alternatives, and your final decision.

GROUP	STATEMENT ON BRIDGE PLACEMENT	ALTERNATIVES	MAJOR CONSEQUENCES	VALUE OF ALTERNATIVES (+ OR -)	DECISION MADE (ACCEPT OR NOT ACCEPT)
FINAL DECISION YOU WOULD MAKE + REASON:					
SAFE-BOATING CLUB		1. 2.	1. 2. 3.	1. 2.	1.
CITIZENS TRAFFIC COMMITTEE		1. 2.	1. 2. 3.	1. 2.	1.
REAL ESTATE ASSOCIATION		1. 2.	1. 2. 3.	1. 2.	1.
ENVIRONMENT-ALISTS		1. 2.	1. 2. 3.	1. 2.	1.
ISLAND BUSINESS ASSOCIATION		1. 2.	1. 2. 3.	1. 2.	1.

ACTIVITY #2 - A MATTER OF SELECTION - (30 minutes)

You are a member of the Governor's transportation committee and you have the duty of selecting the county transportation authority. This authority will have the responsibility to regulate all transportation routes; to construct new transportation routes; to abolish old transportation systems and develop new systems; to handle all cases and situations involving the county's transportation system. In order to make your selections, answer the following questions.

1. Should all members be elected officials?

_______yes _______no

Reasons for your answer

____

____

____

2. Should all members be private citizens?

_______yes _______no

Reasons for your answer

____

____

____

3. Should some members be selected from both public officials and private citizens?

_______yes _______no

Reasons for your answer

____

____

____

4. Should members be selected who represent interest groups? (Real Estate Association, Insurance Groups, etc.)

_______yes _______no

Reasons for your answer

____

____

101

____

5. Should some members be women?

______yes ______no

Reasons for your answer

6. Should some members be selected from various minority groups?

______yes ______no

Reasons for your answer

7. Should county elected officials appoint the transportation authority?

______yes ______no

Reasons for your answer

8. Who or what kinds of people would you select as members? List your selections and state why you made those selections.

MEMBER	REASON
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

9. Based upon the process through which your selections were made, how easy or how difficult was it to make such decisions? Why?

ACTIVITY #3 - CITY COUNCIL ROLE PLAY - (30 minutes)

The city council of St. Petersburg is seriously considering free bus service to city residents as a means of reducing the number of automobiles clogging our highways. After hearing arguments for both sides the members of the city council are to discuss and vote. DIRECTIONS: 6 students will take the role of the city council members. Fourteen students will choose one of the role positions listed. The remainder of the class will assume the role of news reporters. Do your best to be convincing. Good luck!

FOR FREE BUS SERVICE

ROLE

1. You are a 75 year old man living in a state of semi-poverty.
2. You are a downtown merchant counting on increased travel and more business.
3. You are married and cannot afford a second car.
4. You are one of many workers caught everyday in the traffic jam.
5. You have a bad lung condition and feel that less cars will mean better health.
6. You are a member of a government environmental agency trying to cut down on pollution.
7. You've been on the bus company's waiting list a long time for a job as a bus driver.

AGAINST FREE BUS SERVICE

ROLE

8. You are worried about possible higher taxes to keep the buses moving.
9. You're an auto dealer worried about a loss in sales.
10. You just bought a gas station on the main road toward downtown.
11. You live on a quiet street and are disturbed that the bus route will go by your street several times daily.
12. You are afraid that free buses will be a first step toward the complete abolition of cars. You don't want to suffer the inconvenience.
13. You think the plan is expensive and the money would be better spent in other directions.
14. You are a paid spokesman for a monorail company trying to persuade city governments to adopt their system.

FUTURE TRANSPORTATION NEEDS

ACTIVITY #1 - OUTSIDE RESEARCH AND DEBATE - (full period)

Work in pairs and research one of the statements below. One will later argue in favor and the other will argue against. The class will vote on who is most convincing.

TOPIC

1. The automobile has been a blessing to modern urban transportation.
2. The auto industry is opposed to the expansion of mass transit.
3. Cities which are strangling in their transit problems can look only to the Federal Government for help.
4. Our Highway System is fifty years behind the requirements of the times.
5. Rapid mass transit will never replace the auto as a mover of urban passengers.
6. Raising the driving age to twenty-five years would assist in solving the traffic jams.
7. Many people own autos for the increased status it supposedly gives them rather than because they need them.
8. The automobile bears the most blame for the pollution of our city air.

ACTIVITY #2 - 1965-1985 TRAVEL DESIRES MAP - (20 minutes)

1. What types of information do both maps show?
2. What areas of the county experience the heaviest daily traffic in both maps?
3. Can you identify the streets that have the most traffic in both maps?
4. What areas do you think these roads connect?
5. Approximately how many roads are in the 100,000; 50,000; and 25,000 category for 1965 and for 1985?
6. Do you see any difference in travel desires for 1985?
7. What do you consider the major point of difference between the two maps?
8. A. In 1965 what was the density of traffic flow on streets nearest your home?
   B. In 1985 what will be the daily density of traffic flow on streets nearest your home?
9. What conclusions can be made about travel in 1985?

Source:

Social and community - value factors study

Pinellas County, Florida

Grant 701

ACTIVITY #3 MAKE YOUR OWN HIGHWAY SYSTEM - (30 minutes)

A. On your own map, draw what you consider should be the perfect highway system for Pinellas County in 1985.

Indicate the 6-lane, 4-lane, and 2-lane routes. Also indicate which route would be limited access or freeway routes.

Remember to keep in mind the impact on the environment.

B. Now look at the 1985 county recommended street plan. What similarities or differences are there between your map and the county's?

Social & community - value factors study

Pinellas County, Florida

Grant 701

ACTIVITY #4 TRAVEL IN THE YEAR 2,000 - (45 minutes)

This is how a typical spring morning in April of 2,000 might start for a business man residing in Washington, D.C. and working in New York:

With an hour to reach his desk in New York City, 200 miles away, Sam Jones saunte into the subway station. He rides an escalator down to train level.

The train lobby is quiet because it has been sound conditioned. Sam displays his credit card to an electronic scanner. The device identifies him, makes a note of wher he's going, and opens a door to his train. He will be computer-billed for all his travels at the end of the month.

Sam settles down as the train speeds directly downward and levels off in its tube 4,000 feet in the earth. The train's "fuel" is the downward pull of gravity, helped by air pressure behind the train. Top speed is [illegible]00 miles an hour.

In 20 minutes, Sam steps from the train in mid-Manhattan. He has time for a leisurely walk to his office, which doesn't open until 9.

Sound fantastic? It isn't. In fact, it is one of several ideas for improving transportation now under study in Washington.

Source: "Issues Today", April 2, 1971

A. Let your imagination run wild. Write your own story of a city traveler in the year 2,000. What transportation system do you think would be ideal for the future urban traveler? What would be the advantages or disadvantages of your system?

B. List all possible forms of transportation other than vehicles such as cars, buses, or trucks for travel within the county.

C. Of the ones listed, choose the transportation system that you would consider the best.

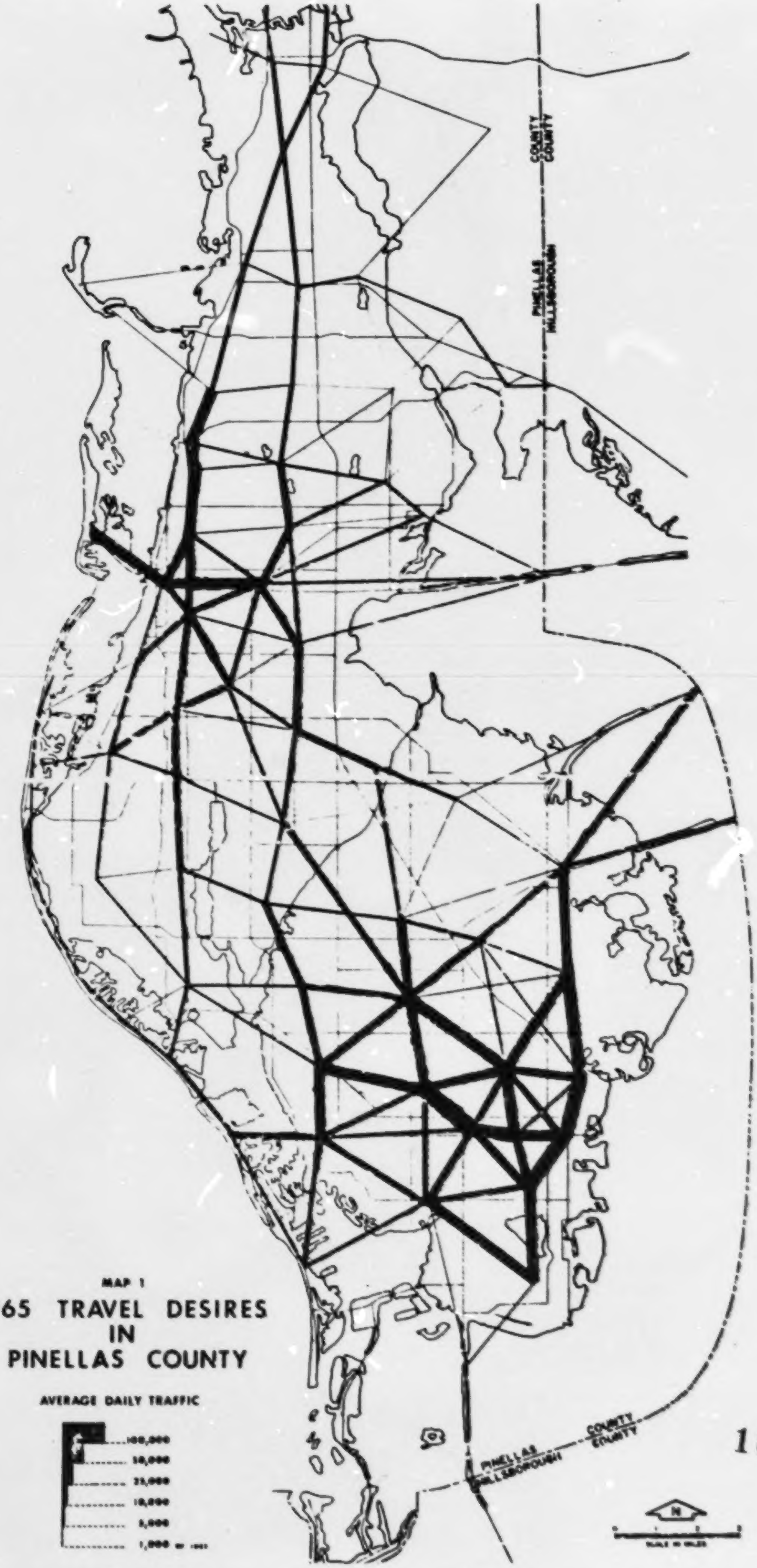
D. Describe your transportation system by answering the following questions:

(1) What it would look like and how it works.
(2) What areas of the county it would connect.
(3) The environmental problems you would encounter.
(4) The advantages and disadvantages of your system.

E. Now draw your system on the Pinellas County outline map provided. Will it meet your county's needs?

HANDOUT #1: UNIT 5 - ACTIVITY 2

1965 TRAVEL DESIRES MAP

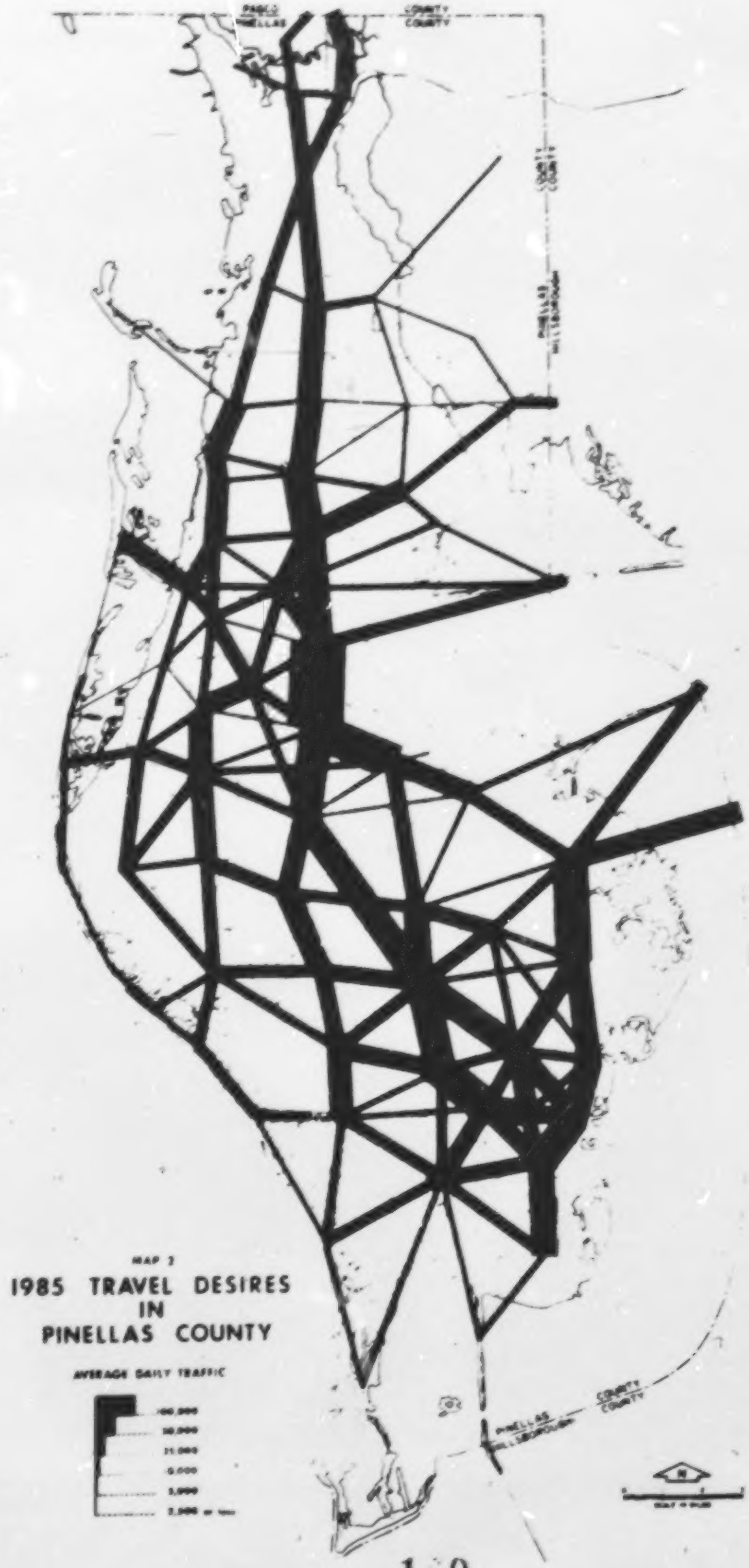


MAP 1

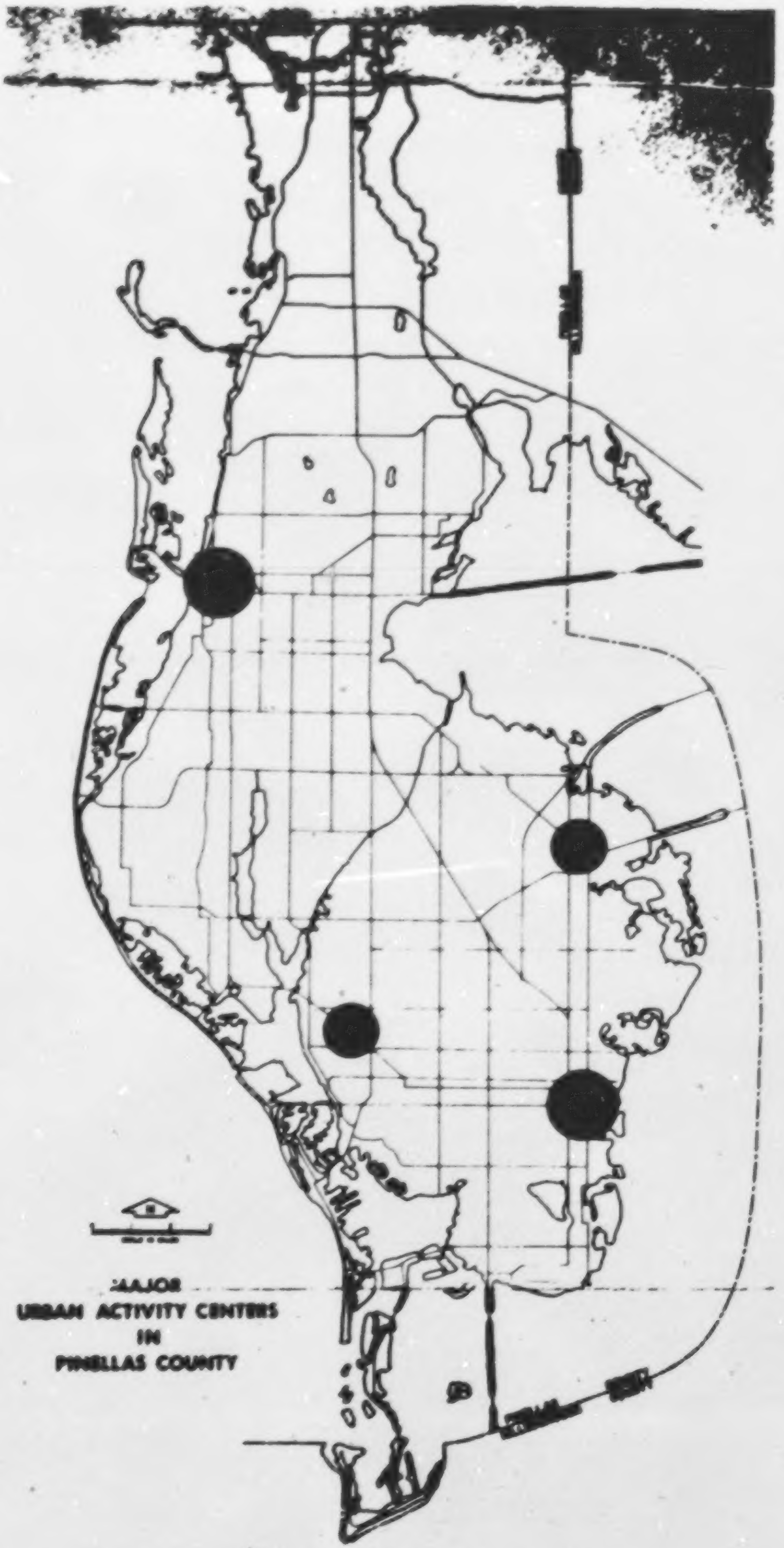
1965 TRAVEL DESIRES
IN
PINELLAS COUNTY

HANDOUT 2: UNIT 5 - ACTIVITY 2

1985 TRAVEL DESIRES MAP



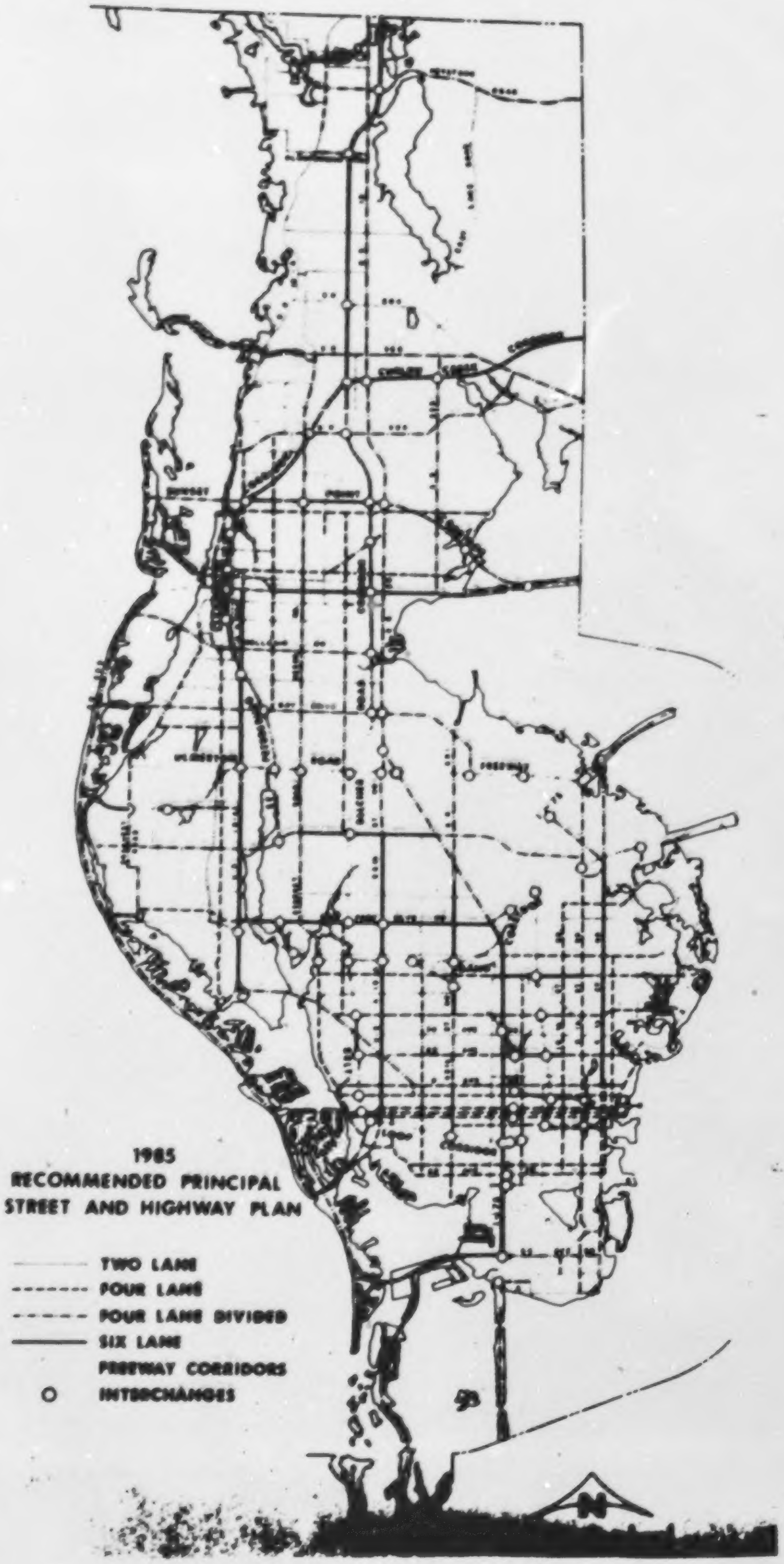
MAKE YOUR OWN HIGHWAY SYSTEM



MAJOR
URBAN ACTIVITY CENTERS
IN
PINELLAS COUNTY

HANDOUT 4 - UNIT 5 - ACTIVITY 3

"MAKE YOUR OWN HIGHWAY SYSTEM"



1985
RECOMMENDED PRINCIPAL
STREET AND HIGHWAY PLAN

THE ACQUISITION, TREATMENT, DISTRIBUTION, USE AND ELIMINATION OF WATER IN PINELLAS COUNTY

INTRODUCTION

This unit pertains to how we acquire, treat, distribute, use, and eliminate our water in Pinellas County. It has been structured to take about five class periods to complete all of the materials although some teachers may find that their students require a little more time than that which is indicated. The general format and suggested time frame for this unit are as follows:

Day No. 1 -- Acquisition of water -- Part I
Day No. 2 -- Acquisition of water -- Part II
Day No. 3 -- Treatment and distribution
Day No. 4 -- Elimination of waste water
Day No. 5 -- Uses of water

In this unit on water, teacher instructions, behavioral objectives, glossaries, materials, and handouts are included for the individual sections. The materials have been constructed for ease of duplication.

The activities vary from semi-programmed readings and questions to chart making and role playing situations. It is hoped that at the conclusion of this unit your students will have a much better understanding of the water situation in Pinellas County.

WATER ACQUISITION -- PART I

OBJECTIVES: The student will complete a diagram of the water cycle and of a watershed, look at transparencies and list as many uses as he can for water.

MATERIALS: Handouts and/or transparencies # 1-14

PROCESS:

1. See if student can correctly identify terms on Handout #1 of water cycle.

2. Show and discuss in detail, as time permits, Handout #2 and/or #3 a, 3b, 3c (overlays) "Hydrologic Cycle".

3. Discuss Handout #4 "What is a Watershed?" Tie it into water cycle discussed in step 1 and 2. Use Handouts 5 and 6 "Water Movement on a watershed" and Concentrated Flow on a Watershed "Streams" for more detail.

4. Give each student a copy of "Major Water Areas of Pinellas County". Handout #7. Make transparencies and use Handout #8 "Natural Drainage Basins" as an overlay to Handout #7. Student should identify the watershed in which they live. (Teacher may want the student to color this area on his map).

5. Students should study handouts #9-14:
   Handout #9 "What Happens to Water"
   #10 "Water is Essential for Industry"
   #11 "Food Chain"
   #12 "Water for Power Production"
   #13 "Water for Recreation and Wildlife"
   #14 "Water Use per Person in the Home"

6. On the back of Handout #7 "Waterways of Pinellas County" have students list ways that their families use water. (Save maps for activity next day).

WATER ACQUISITION -- PART II

OBJECTIVE: The student will be able to identify water supply as a major problem of Pinellas County. The student will be able to define salt-water intrusion when given a list of vocabulary words and meanings. The student will be able to name past and present sources of water for Pinellas County.

MATERIALS: Handouts and/or transparencies #15-18, #7

PROCESS:

1. Read or write news bulletin on board or overhead: "______________________________" (insert name of community) will be allowed to have water between the hours of 10:00 A.M. 12:00 noon.

2. Teacher will flash "Fresh Water For Sale" Handout #15. Through teacher-led discussion students will determine that this is a possibility here (in Pinellas County).

3. Salt-water intrusion, a unique problem in Pinellas County is shown on Handout #16 "Chloride Content of Ground Water" and Handout #17 "Salt-water Intrusion".

4. Through teacher-led discussion, see if student can come with solutions to water problems.

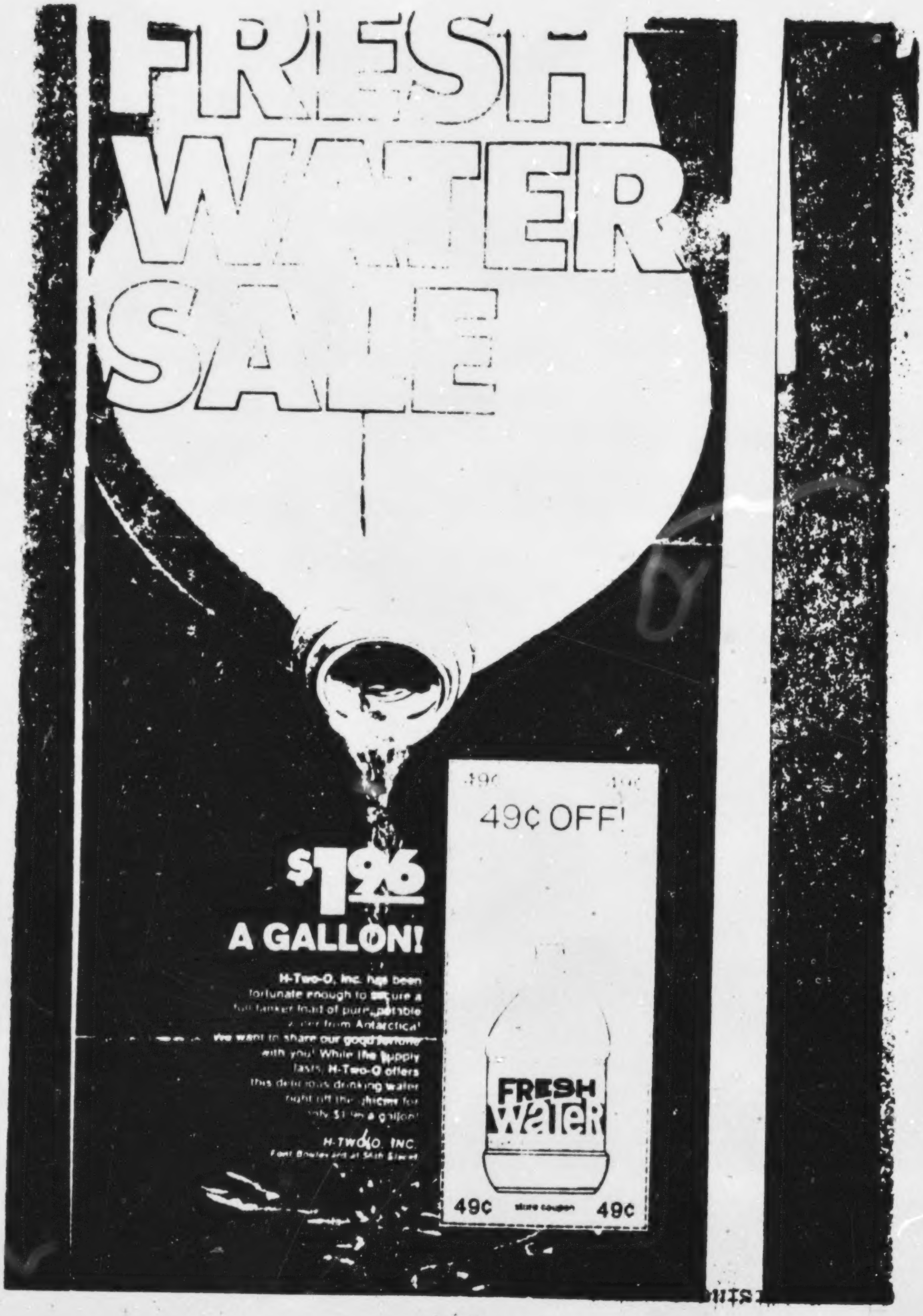
5. History of the Problem: Students will write three statements by copying them from the board or overhead projector.

    1. In 1920's all of St. Petersburg's water supply came from surface water in the city limits.
    2. In 1960, well-fields in Tarpon Springs still did not provide enough water for the growing area.
    3. In 1975 - Pinellas County now has to go to Pasco and Hillsborough County well-fields to meet demands for water.

6. Handout #18 "Water for Pinellas County": Note the main sources or well-fields in Northeast Pinellas, Northwest Hillsborough, and south Pasco Counties.

7. Note the Cypress Creek well-field on the map where we will soon get a large part of our water supply.

8. Student uses map Handout #7 "Major Water Areas of Pinellas County" and shades in lightly with pencil the main areas of salt-water intrusion. Draw arrows showing where the present supply comes from.
   (This same map will be used for a later activity dealing with Water Elimination Systems).



FRESH WATER SALE

$1.96 A GALLON!

H-Two-O, Inc. has been fortunate enough to secure a full tanker load of pure, potable water from Antarctica! We want to share our good fortune with you! While the supply lasts, H-Two-O offers this delicious drinking water right off the glacier for only $1.96 a gallon!

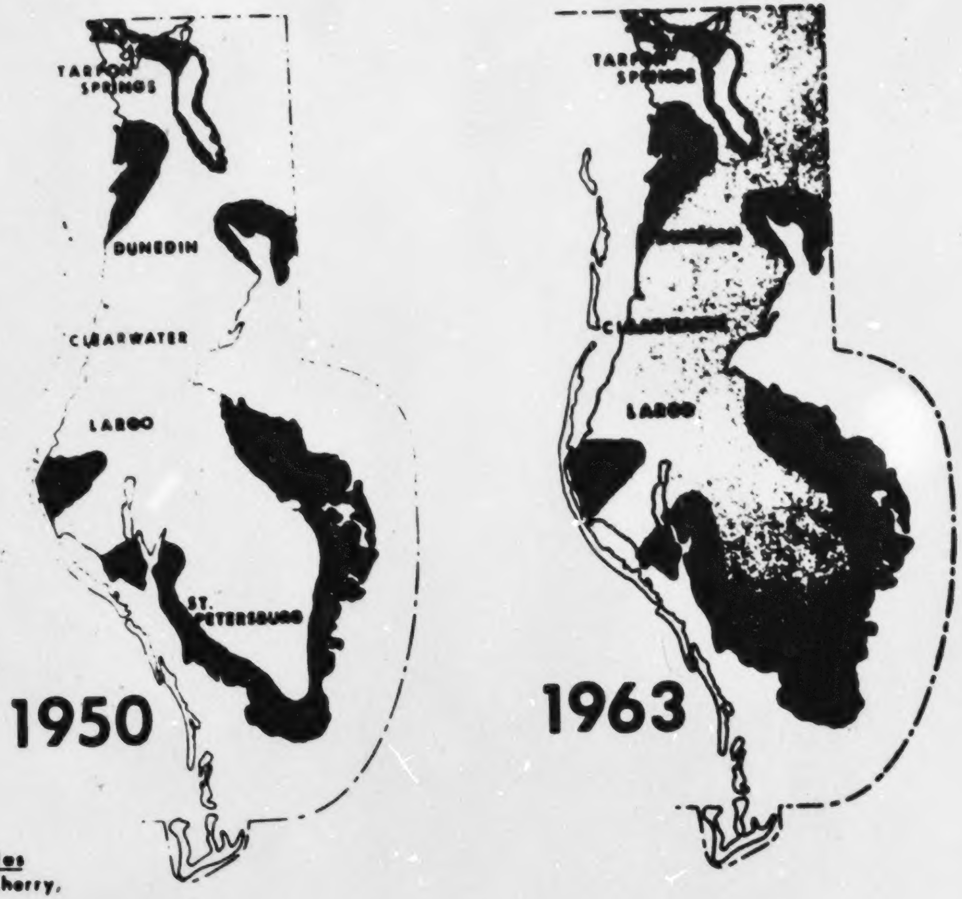
H-TWO-O, INC.
East Boulevard at 56th Street

CHLORIDE CONTENT OF GROUND WATER

WELL DEPTH 126 - 250 FEET

■ Chloride Content Greater Than 250 ppm

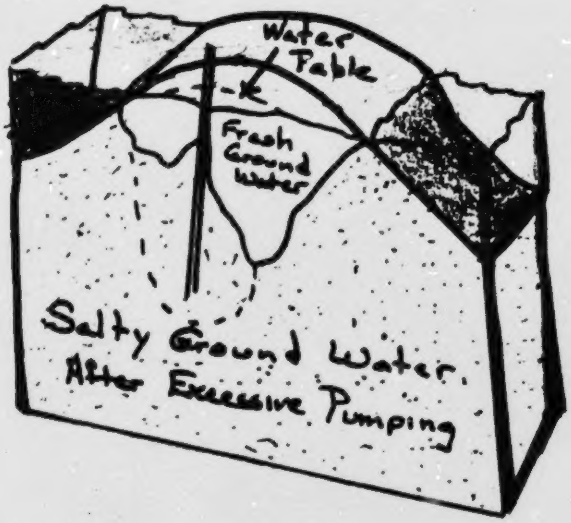
☐ Chloride Content Less Than 250 ppm



The salt water - fresh water boundary beneath Pinellas County did not advance appreciably between 1950 and 1963 due to the fact that most municipal water is now drawn from wells in the northeast corner of the county and Hillsborough County and that many wells formerly used to irrigate citrus have been abandoned.

SOURCE: Chloride Content of Ground Water in Pinellas County, Florida, in 1950 and 1963, R. N. Cherry, Fla. Board of Conservation, July, 1966.

Salt-Water Intrusion



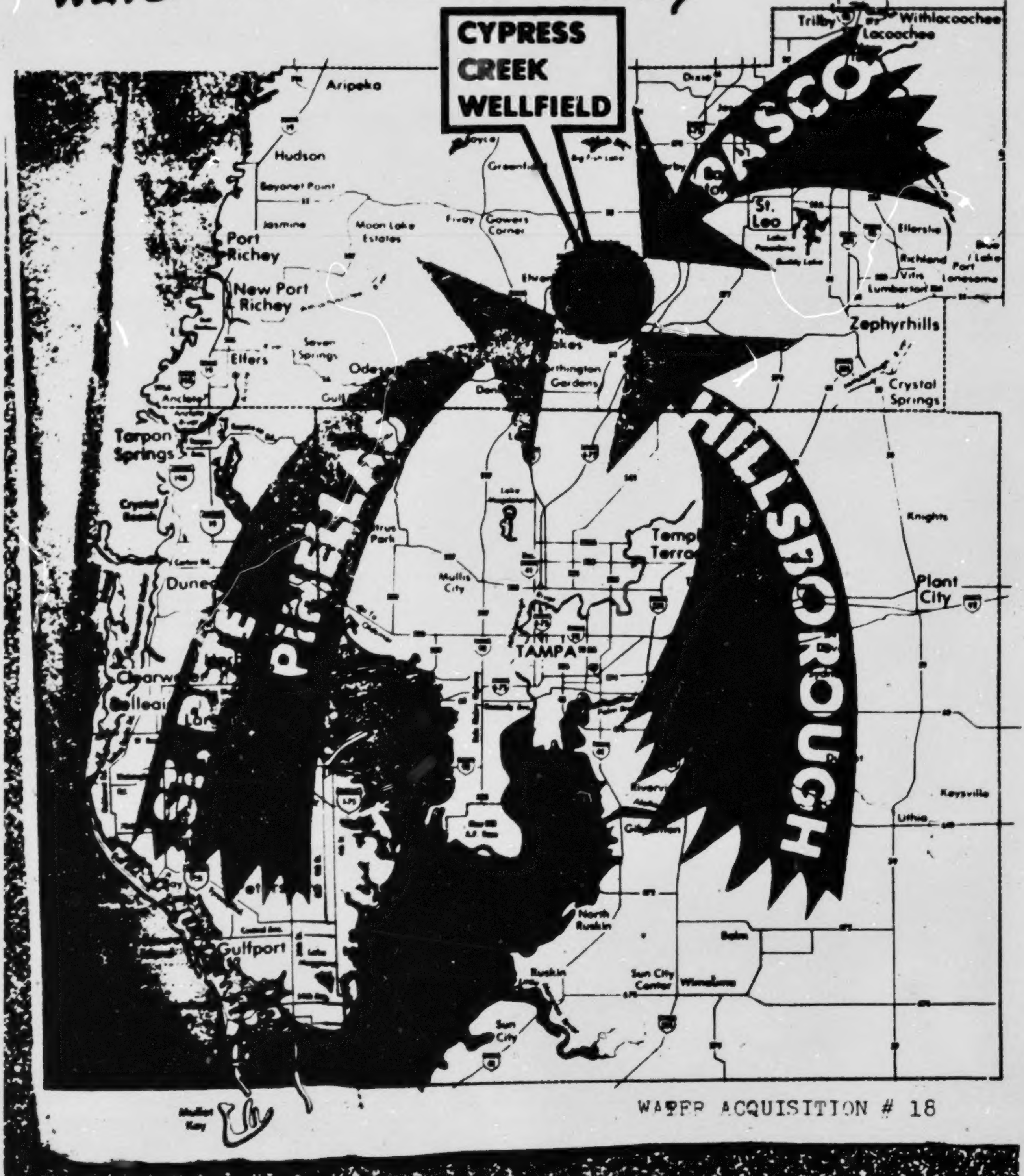
What happens to a pocket of fresh ground water after exeessive pumping?

Salt water will move inland from the Gulf and upward from below Underneath the whole state of Florida is a layer of salt water just waiting to more in where fresh water supplies are withdrawn too rapidly.

In Pinellas water use was once 50-60 gallons per day. It is now approaching 140-160 gallons.

40 to 60 per cent of all water used in Pinellas County is used for lawn watering..

Water For Pinellas County



WATER ACQUISITION # 18

BEST COPY AVAILABLE

THE TREATMENT AND DISTRIBUTION OF WATER IN PINELLAS COUNTY

TEACHER INSTRUCTIONS

The materials in this part of the water study unit have been semi-programmed. Your students should be able to answer the questions that are intersperced with the readings by referring to the part of the readings that directly precedes the questions. Most of the key points or facts in the readings have been underlined for easier reading and reference. Each student should have a copy of the glossary, student worksheet, and the diagramatic chart showing the water supply, treatment and distribution system of the city of St. Petersburg. It is important that your students become familiar with the vacabulary words before starting their work in this section. A color slide series showing the actual stages of water treatment at the Cosme Water Treatment Plant for the City of St. Petersburg Water System are available through Dr. John Still, Social Studies Supervisor at the Largo C and I Center (585-8591).

OBJECTIVES:

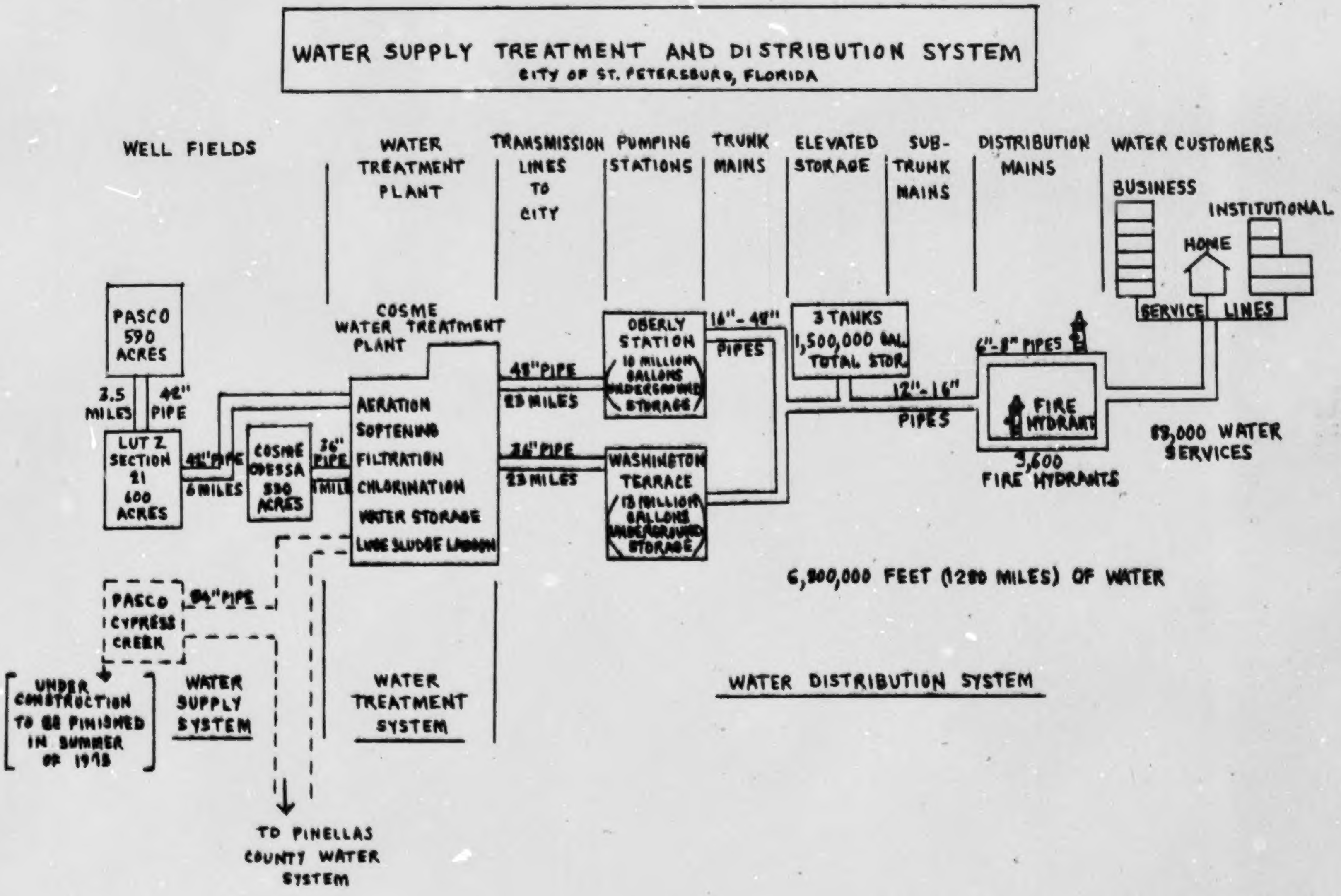
Give the student worksheet materials on the treatment, supply, and distribution of water; the diagramatic chart showing the treatment, supply, and distribution of water for the City of St. Petersburg; and the Glossary, the student will be able to:

1. List the two water systems that supply water to the cities and areas in Pinellas County.
2. List and explain the four processes of water treatment used by the Cosme Water Treatment Plant in the City of St. Petersburg Water System.
3. Make a simple diagram of the water treatment and distribution system of the City of St. Petersburg which would include well fields, treatment plant, pumping stations, underground and elevated storage, and customer supply.

GLOSSARY

You may not know the meaning of the following words that are used in this part of your study of water. Knowing the definitions for these words will help you to understand the material you are about to study.

1. Aeration - A process in water treatment where air is mixed with the raw water to help eliminate the sulfur, which has a disagreeable odor, from the water.
2. Calcium - One of the minerals in hard water that makes it difficult for soaps to produce suds, and leaves a deposit when the water evaporates.
3. Chlorine - A chemical that is added to water, usually in a gas form, in order to eliminate any bacteria picked up in pumping or treatment.
4. Filtration - A process used in water treatment where clumps or suspended particles are removed from the water by sand, gravel, or other filtering substances.
5. Interties - A cross-over pipe connecting the main pipelines of two water systems.
6. Lime - A chemical added to water during the treatment process, usually in the form of a powder, which causes the calcium and other minerals in the water to clump together and settle to the bottom making the water softer.
7. Peak Demand - The maximum demand, usually expressed in million gallons per hour or day, that is placed on a water system by the customers.
8. Potable Water - Water that is pure and safe for humans to drink.
9. Raw Water - Untreated water.
10. Sulfur - A chemical found in raw water, usually in the form of hydrogen sulfide gas, that produces a disagreeably "rotten eggs" odor.


WATER SUPPLY TREATMENT AND DISTRIBUTION SYSTEM
CITY OF ST. PETERSBURG, FLORIDA
WELL FIELDS
WATER TREATMENT PLANT
TRANSMISSION LINES TO CITY
PUMPING STATIONS
TRUNK MAINS
ELEVATED STORAGE
SUB-TRUNK MAINS
DISTRIBUTION MAINS
WATER CUSTOMERS
PASCO 590 ACRES
3.5 MILES
42" PIPE
LUTZ SECTION 21 600 ACRES
42" PIPE
6 MILES
COSME ODESSA 330 ACRES
36" PIPE
1 MILE
COSME WATER TREATMENT PLANT
AERATION
SOFTENING
FILTRATION
CHLORINATION
WATER STORAGE
LIME SLUDGE LAGOON
48" PIPE
23 MILES
36" PIPE
23 MILES
OBERLY STATION 10 MILLION GALLONS UNDERGROUND STORAGE
WASHINGTON TERRACE 13 MILLION GALLONS UNDERGROUND STORAGE
16"-48" PIPES
3 TANKS 1,500,000 GAL. TOTAL STOR.
12"-16" PIPES
6"-8" PIPES
FIRE HYDRANT
3,600 FIRE HYDRANTS
BUSINESS
HOME
INSTITUTIONAL
SERVICE LINES
83,000 WATER SERVICES
6,800,000 FEET (1280 MILES) OF WATER
PASCO CYPRESS CREEK
84" PIPE
UNDER CONSTRUCTION TO BE FINISHED IN SUMMER OF 1973
WATER SUPPLY SYSTEM
WATER TREATMENT SYSTEM
TO PINELLAS COUNTY WATER SYSTEM
WATER DISTRIBUTION SYSTEM

THE TREATMENT AND DISTRIBUTION OF WATER IN PINELLAS COUNTY

STUDENT WORKSHEET

INTRODUCTION

In the last two days you have learned about the water cycle and how the earth receives its supply of fresh water. You have also learned how Pinellas County acquires its fresh water supply from deep underground wells located in Pasco, Hillsborough, and upper-Pinellas County. The raw untreated water that is drawn from these wells is transported through pipes to the water treatment plants where the water will be purified and then pumped out for storage and distribution.

WATER SYSTEMS

Now you will learn how the raw water from the wells is treated and pumped out, through miles of pipelines to the people who need it. There are two water systems that supply the water to the Cities in Pinellas County. One of the systems is the Pinellas County Water System, and the other is the City of St. Petersburg Water System. The areas that the City of St. Petersburg Water System supplies with water are St. Petersburg, Gulfport, Oldsmar, South Pasadena, Bear Creek, Bay Pines, Lealman, and Gandy. The Pinellas County Water System supplies Clearwater, Tarpon Springs, Dunedin, Largo, Pinellas Park, Seminole, several beach communities, and many additional areas as well.

1. The two water systems that supply fresh water to Pinellas County are:

   ____

   ____

2. List 4 cities or areas that the City of St. Petersburg Water System supplies with water.

   ____

   ____

   ____

   ____

3. List 4 cities or areas that the Pinellas County Water System supplies with water.

   ____

   ____

   ____

   ____

WATER TREATMENT AND PURIFICATION

We will now examine how one of the water systems, the City of St. Petersburg Water System, treats its water before pumping it out for the people to use. The purpose of this water system, as well as the Pinellas County Water System, is to provide an adequate supply of potable water for domestic use, commercial use, and fire fighting purposes.

4. What is the purpose of the City of St. Petersburg Water System?

____

____

____

The raw water from the wells in Pasco and Hillsborough Counties travels through pipes to the Cosme Water Treatment Plant which is located in Hillsborough County just Northeast of Oldsmar and the Pinellas County line. When the water reaches the treatment plant it goes through the process of (1) aeration, (2) lime softening, (3) filtration, and (4) chlorination before it is pumped out for storage or use.

5. The raw water from the Pasco and Hillsborough well fields is treated at the ______________________________ Plant which is located ______________________________

6. List the 4 processes of water treatment that occurs at the Cosme Water Treatment Plant before the water is pumped out for storage or use.

(1) ____________________

(2) ____________________

(3) ____________________

(4) ____________________

When the water enters the treatment plant it is first treated in aerator tanks. Air is mixed with the water in these tanks to remove the objectional, but not harmful, odor that is caused by the presence of sulfur in the raw water.

7. What is mixed with the water in the aerator tanks? ____________

8. What is removed from the water by the process of aeration?

____

Next, the water is softened by adding lime to the water. The lime powder reacts with the hard chemicals in the water, such as calcium, to form clumps that settle to the bottom. This makes the water softer and better for washing because it will produce more suds from soap than will the harder water.

9. What is added to the water to make it softer? ____________

10. What does the lime powder react with in the water to form clumps that settle to the bottom?

____

11. Give one reason why softened water is better than hard water.

____

The third step of water treatment is filtration. After the water has been softened, it is sent through huge tanks that hold particles of coal. The force of gravity acts to pull the water down through the filters. In this stage of water treatment, the particles of coal remove any clumps left from the softening process or other materials formed from chemical action when the water is aerated.

12. After being softened, the water filters down through huge tanks that hold ____

13. The particles of coal filter the water by removing any ____________
left from the softening process, or ______________________
formed from chemical action when the water is ______________

Chlorination is the final step of water treatment at the Cosme Water Treatment Plant. Before the water leaves the plant for storage or distribution, chlorine is added to kill any bacteria picked up in pumping or treatment. The chlorine level in the water is kept at around 0.5 parts of chlorine per million parts of water (0.5 p.p.m.).

14. What is added to the water in the final stage of water treatment to kill any bacteria picked up in the water from pumping or treatment?

____

15. At what level is the chlorine maintained in the water?

____

DISTRIBUTION - SUPPLYING THE WATER TO THE PEOPLE

Study the chart in this section that shows the supply, treatment, and distribution system of the City of St. Petersburg. Answer the following questions pertaining to this chart.

16. The City of St. Petersburg Water System has deep well fields in three areas. What are those three areas?

____

____

____

17. A fourth area that is a joint project with the Pinellas County Water System and is due to be completed in the summer of 1975 is the ______________________________ well field.

18. Where is the water treated after it is pumped from the well fields?

____

19. How many miles of pipeline does the water travel through to get from the water treatment plant to either of the pumping stations?

______________________ miles.

20. What are the names of the two pumping stations?

____

____

21. What is the combined amount of underground water storage capacity at the two plants? (Hint -- you must add the two together to get the total capacity).

______________________ gallons.

22. How many elevated storage tanks (water towers) are there in the City of St. Petersburg Water System?

____

23. What is the total storage capacity of the elevated tanks?

______________________ gallons.

24. How many fire hydrants are there in the City of St. Petersburg Water System?

______________________ hydrants.

25. How many individual customer water services are there in the system?

______________________ water services.

26. How many miles of water are flowing through the City of St. Petersburg Water System?

______________________ miles.

A FEW MORE INTERESTING FACTS

Here are a few more interesting facts about the City of St. Petersburg Water System. In 1973, the total pumping capacity from the Oberly and Washington Terrace Pumping Stations was 85 million gallons per day, and the total peak demand by the customers was 45.8 million gallons per day. By 1978, due to the expected increase in population, the total pumping capacity will be increased to 105 million gallons per day, and the expected peak demand will be 55.5 million gallons per day.

27. In 1973, the total pumping capacity of the City of St. Petersburg Water System __________________ million gallons per day.

28. In 1973, the total peak demand for water by the customers of the City of St. Petersburg was __________________ million gallons per day.

29. What is the expected total peak demand by customers for water in 1978?

____ million gallons per day.

Many millions of gallons of pure treated water must be kept stored in underground and elevated storage tanks in order to meet the demand for water. Some of the water is kept stored in high above ground water towers to help maintain the water pressure in the water pipes. As the water travels further away from the two pumping stations the pressure tends to fall off due to friction in the pipes. When the water leaves the pumping stations, the water pressure is around 85 pounds per square inch. The high water towers help maintain this pressure throughout the system. It is this pressure that makes the water shoot out of your faucet or hose when you turn on the water tap.

30. When the water leaves the pumping stations the pressure is around __________________ pounds per square inch.

31. As the water travels further away from the pumping stations the pressure falls off due to _______________________ in the pipes.

32. What are used to help maintain the water pressure in the pipes?

____

The two water systems that supply water to Pinellas County, the Pinellas County Water System and the City of St. Petersburg Water System, are now working together to make sure their customers receive enough water. Besides several cross-over pipes called interties between the two systems (so they may share water in an emergency) the two water systems are developing the Cypress Creek Well-field in Pasco County as a joint project.

33. In case of an emergency, one water system may obtain water from the other system through cross-over pipes called _____________________.

Now that you have learned about how your water is obtained, treated, and supplied to you, it is important to understand how the water is used and how the waste water is eliminated. This will be discussed in the next two parts of this section.

ELIMINATION OF WASTE WATER

OBJECTIVES:

1. Given community maps, plant disposal maps, and sewage disposal system chart, students will be able to locate the plant that services his community and be able to identify the kind of plant it is, its capacity, and its discharge basin.

2. Given a flow chart of sewage disposal, a 3-step disposal system chart, the student will be able to trace the sewage from the entry pipe to the disposal basin and point out the step in the system where his community system ends.

3. Given sewage disposal system chart, Pinellas County population-housing units chart, students will be able to prove the generalization: "There is a level of human waste beyond which the sewage system cannot absorb".

4. Given an evaluation questionnaire on the problem of waste disposal, the student will be able to evaluate the Pinellas County waste disposal problem.

WATER DISPOSAL -- MATERIALS NEEDED

1. Map of Pinellas County communities.
2. Map of Pinellas County Sewage Disposal Plants.
3. Pinellas County Population - Housing Units Chart.
4. Pinellas County Sewage Disposal System Chart.
5. Map of major Water Ways in Pinellas County (in Water Acquisition section).
6. Drawing of three types of sewer plants and its flow chart with key.

ELIMINATION OF WASTE WATER

BACKGROUND INFORMATION FOR THE TEACHER

AN URBAN PROBLEM: SEWAGE DISPOSAL

An urban community has many problems that a rural community does not have. One of the greater problems is how to dispose of waste water, including sewage.

The are four basic methods that can be used: septic tanks, primary treatment plants, secondary treatment plants, and tertiary treatment plants. The purpose of the WATER POLLUTION CONTROL ACT OF 1972 is to prevent, reduce, and eliminate water pollution.

The septic tank method can only be used in small rural communities. In choosing which of the other three methods of waste disposal to use, an urban community must consider the legal, economic, and efficiency aspects.

The average Pinellas County resident generates enough sewage every day to fill four standard-sized bath tubs. This is 125 gallons. This sewage is made up of the water a person uses in running his toilets, cooking, bathing, washing clothes, plus the garbage, human waste, and other solid waste he puts into the sewer system. This does not include waste from garbage disposal units, laundry and dishwashing machines, nor waste from industrial plants, business establishments, hospitals, schools, prisons, etc. Neither does it include the ground water that infiltrated the system.

A sewage treatment plant uses the term MGD (Millions of gallons per day) as the unit to measure the amount of sewage that passes through the plant a day.

At the present time, Pinellas County uses primary and secondary treatment plants. The building of tertiary plants is being considered by the County Planning Board, but has not been adopted to date.

It is recommended that a field trip be made to one of the Pinellas County Sanitation Department's sewage disposal plants.

ELIMINATION OF WASTE WATER

PROCESS FOR TEACHING

Step I Given map of Pinellas County Communities.

Map of Pinellas County Sewage Disposal Plants, and Pinellas County Sewage Disposal chart the student will be able to locate the plant that serves his own community and identify the kind of plant it is, its capacity, and its discharge basin by answering the following questions:

1. What is the sewage disposal plant that services my community?
2. What type of treatment does that plant use?
3. What is the capacity in million of gallons per day does that plant have?
4. Where is the disposal basin for the sewage that flows through that plant?

Step II Using the map "Major Waterways" Handout #7 - the student will use the color brown to show the discharge basin that is used by the sewage treatment plant that services his community.

Step III Given the Pinellas County Sewage Disposal chart and the Sewage Plant drawing with its flow chart students will be able to trace sewage from entry pipe to a disposal basin and point out the place on the flow chart where the system his community uses ends.

Students will refer to the County Sewage Disposal System chart to find out what type of sewage plant his community uses. He will study the key to the flow chart and follow the sewage system marking it with a color until he reaches the place where his community's system ends. At that point on the flow chart he will draw a discharge pipe leading from it to a box which he will draw and label with the name of the discharge basin which his community's disposal system uses for a discharge basin.

Step IV Given the Pinellas County Disposal System chart and the Pinellas County Population - Housing Unit chart the student will be able to prove a generalization statement about the present sewage disposal problem facing Pinellas County.

Using the following generalization statement:

THERE IS A LEVEL OF HUMAN WASTE BEYOND WHICH THE PRESENT SEWAGE

SYSTEM CANNOT ABSORB

Answer the following questions:

1. **What was the population of Pinellas County in 1970?** ____________________
2. **What was the population of Pinellas County in 1974?** ____________________
3. **What was the increase in population from 1970 to 1974?** ____________________

Step IV, con't.

4. How many housing units were in Pinellas County in 1970? ____________

5. How many housing units were in Pinellas County in 1974? ____________

6. What was the increase in housing units between 1970 and 1974? __________

7. What was the sewage discharge in Pinellas County in 1970? ____________

8. What was the sewage discharge in 1972? ________________________

9. What was the capacity of the total disposal system in Pinellas County in 1972? ________________________

10. In the space below prove or disprove the generalization statement given at the beginning of this questionnaire.

____

Step V Given a questionnaire, students will be able to evaluate the problem of waste disposal in Pinellas County.

1. List your recommendations for solving the water disposal problem that faces Pinellas County in 1976.

____

____

____

2. On the rating lines below estimate your responses:

a. How important do you rate the problem of waste disposal in Pinellas County?

____

top priority — very little

b. How much is your community concerned about the problem of waste disposal?

____

too much — no concern

c. How much is your family trying to help solve the problem of waste disposal?

____

much much — very little

d. How much of the problem is caused by our school restrooms?

____

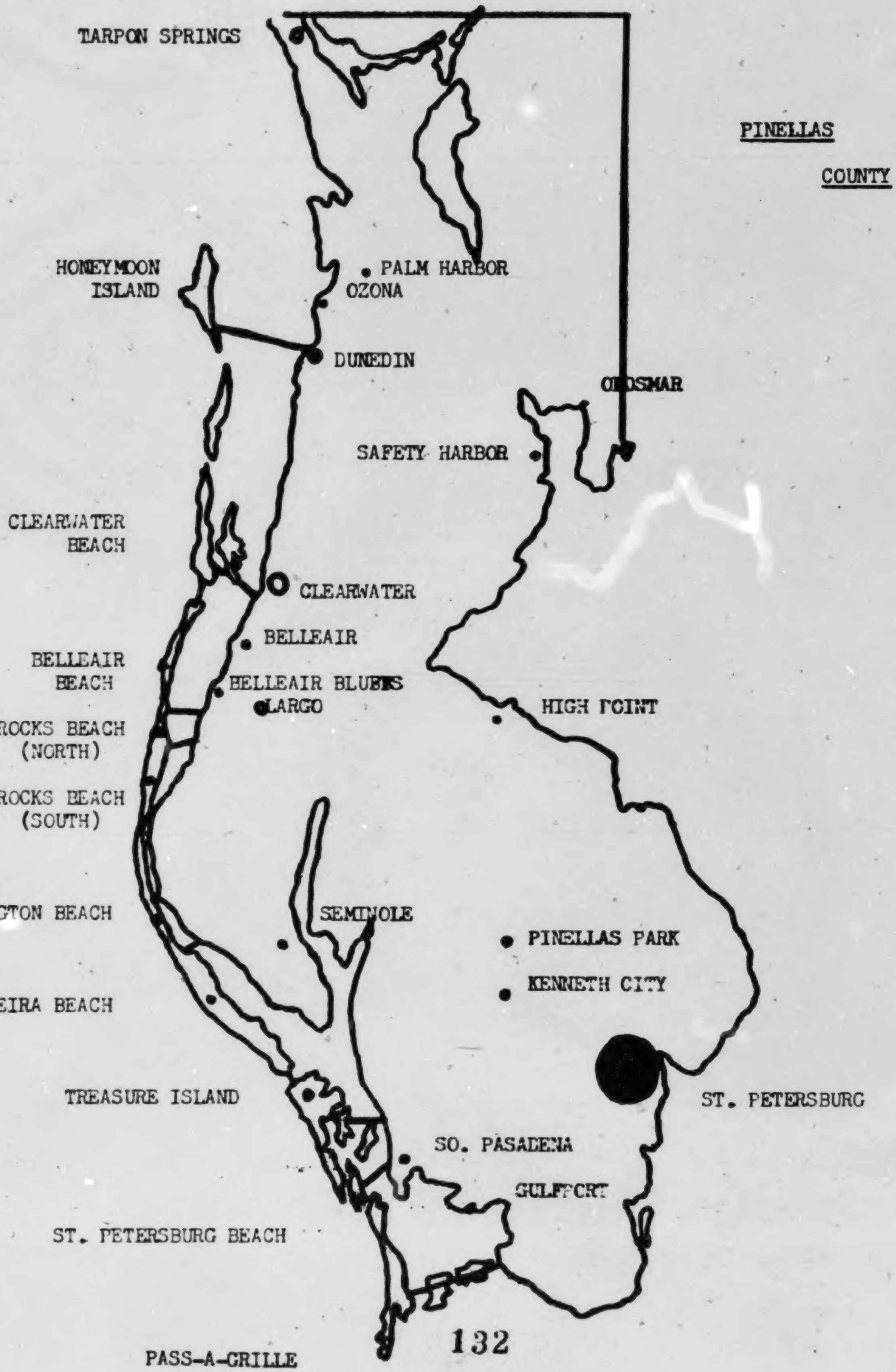
not part of the problem — large part of the problem

Step V, con't.

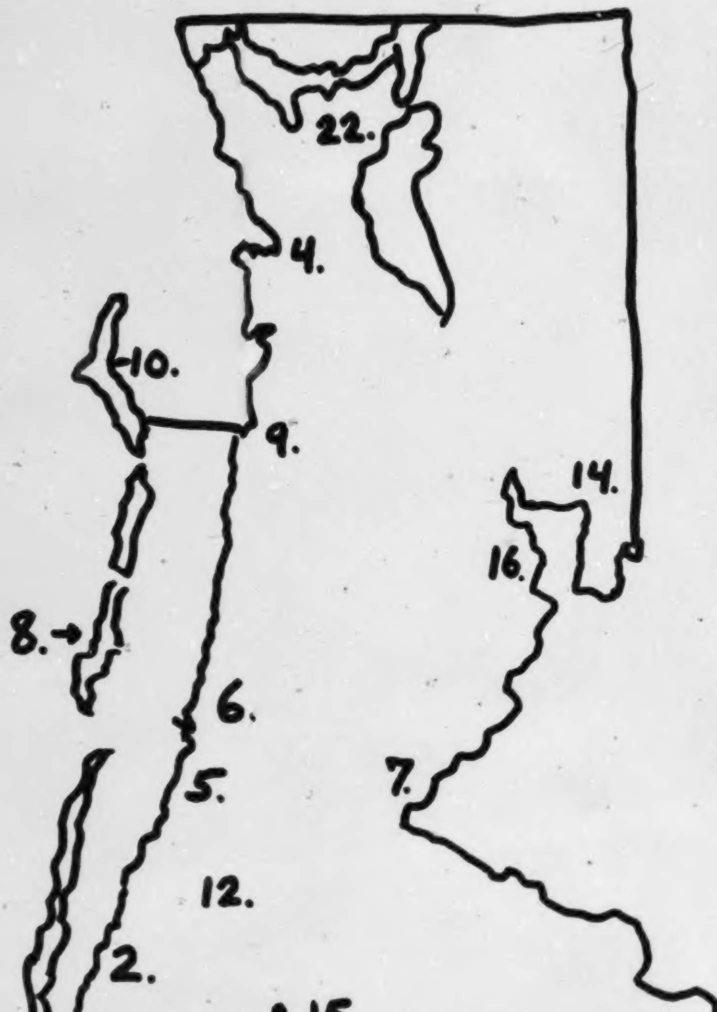
3. List 5 things you as an individual can do to improve the waste accumulation and disposal:

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

Pinellas County Communities



Pinellas Co. Sewage Disposal Plants



KEY

1. Cross Bayou
2. McKay Creek
3. S. Cross Bayou
4. Innisbrook
5. Belleair
6. Clearwater - Marshall St.
7. Clearwater - East
8. Clearwater - Marina
9. Dunedin - city
10. Dunedin - Honeymoon Is.
11. Indian Rocks
12. Largo
13. Maderia Beach
14. Oldsmar
15. Pinellas Park
16. Safety Harbor
17. St. Pete - A. Whitted
18. St. Pete - N.E.
19. St. Pete - S.W.
20. Gulfport
21. St. Pete Beach
22. Tarpon Springs
23. Treasure Island

PINELLAS COUNTY -- POPULATION & HOUSING UNITS

MUNICIPALITIES	POPULATION		HOUSING	
	1970	1974	1970	1974
Belleair	2,962	3,679	1,234	1,577
Belleair	952	1,803	458	892
Belleair Bluffs	1,910	2,815	900	1,366
Belleair Shores	124	133	59	65
Clearwater	52,074	78,355	23,332	36,149
Dunedin	17,639	29,621	8,479	13,662
Gulfport	9,730	12,669	4,711	6,327
Indian Rocks Beach	2,666	3,566	1,325	1,825
Indian Rocks	791	2,455	487	1,559
Kenneth City	3,862	4,993	1,739	2,314
Largo	22,031	53,186	9,243	22,991
Maderia Beach	4,158	4,881	2,342	2,821
North Redington Beach	768	1,225	416	681
Oldsmar	1,538	3,750	513	1,286
Pinellas Park	22,287	35,059	7,981	12,928
Redington Beach	1,583	1,725	758	849
Redington Shores	1,733	3,275	1,082	2,106
Safety Harbor	3,103	4,860	1,147	1,852
St. Petersburg	216,232	257,872	97,111	118,969
St. Pete Beach	8,024	12,023	4,375	6,759
Seminole	2,121	3,906	922	1,747
South Pasadena	2,063	5,653	1,142	3,213
Tarpon Springs	7,118	11,536	2,647	4,412
Treasure Island	6,120	8,035	3,075	4,154
Incorporated	391,589	545,075	175,478	250,504
Unincorporated	130,740	186,437	53,284	78,289
TOTAL COUNTY	522,329	731,512=40% increase	228,762	328,793

TOTAL SEWAGE DISCHARGE (MGD)	1970	1972	1974
	55,105,714	71,840,000	77,145,000 (40% increase)

PINELLAS COUNTY SEWAGE DISPOSAL SYSTEM 1972

DISPOSAL PLANTS	TYPE OF TREATMENT (see key below)	CAPACITY	DISCHARGE BASIN
1. Cross Bayou	TF	0.44	Boca Ciega Bay
2. McKay Creek	AS	1.50	Boca Ciega Bay
3. So. Cross Bayou	TF	5.00	Joe's Creek
4. Innisbrook	EA	0.30	St. Joseph's Sound
5. Belleair	AS	0.50	Clearwater Bay
6. C'Water-Marshall St.	AS	4.00	Stevenson Creek
7. C'Water East	AS	2.00	Old Tampa Bay
8. C'Water-Marina City	AS	1.50	Clearwater Harbor
9. Dunedin City	CS	2.00	St. Joseph's Sound
10. Dunedin-Honeymoon Is.	EA	0.50	St. Joseph's Sound
11. Indian Rocks Beach	AS	0.45	McKay Creek
12. Largo (Newport)	CS	3.00	Lake Seminole (Tampa Bay)
13. Madeira Beach	P	2.2-	Boca Ciega Bay
14. Oldsmar	TF	0.30	Mobbly Bay
15. Pinellas Park	AS	1.50	Cross Bayou Canal
16. Safety Harbor	TF	0.35	Mullet Creek
17. St. Pete (Whitted)	CF	20.00	Tampa Bay
18. St. Pete N. E.	AS	8.00	Tampa Bay
19. St. Pete N. W.	AS	9.00	Boca Ciega Bay
20. St. Pete S. W.	AS	8.00	Boca Ciega Bay
21. St. Pete Beach	AS	1.30	Boca Ciega Bay
22. Tarpon Springs	P	0.75	Anclote River
23. Treasure Island	CS	2.30	Boca Ciega Bay
	Total	74.17 MGD	

KEY

AS = Activated sludge
CS = Extended aeration
TF = Trickling filter
P = Primary
MGD= Million gallons a day

Source: St. Pete Times 5/10/72 - page 5B

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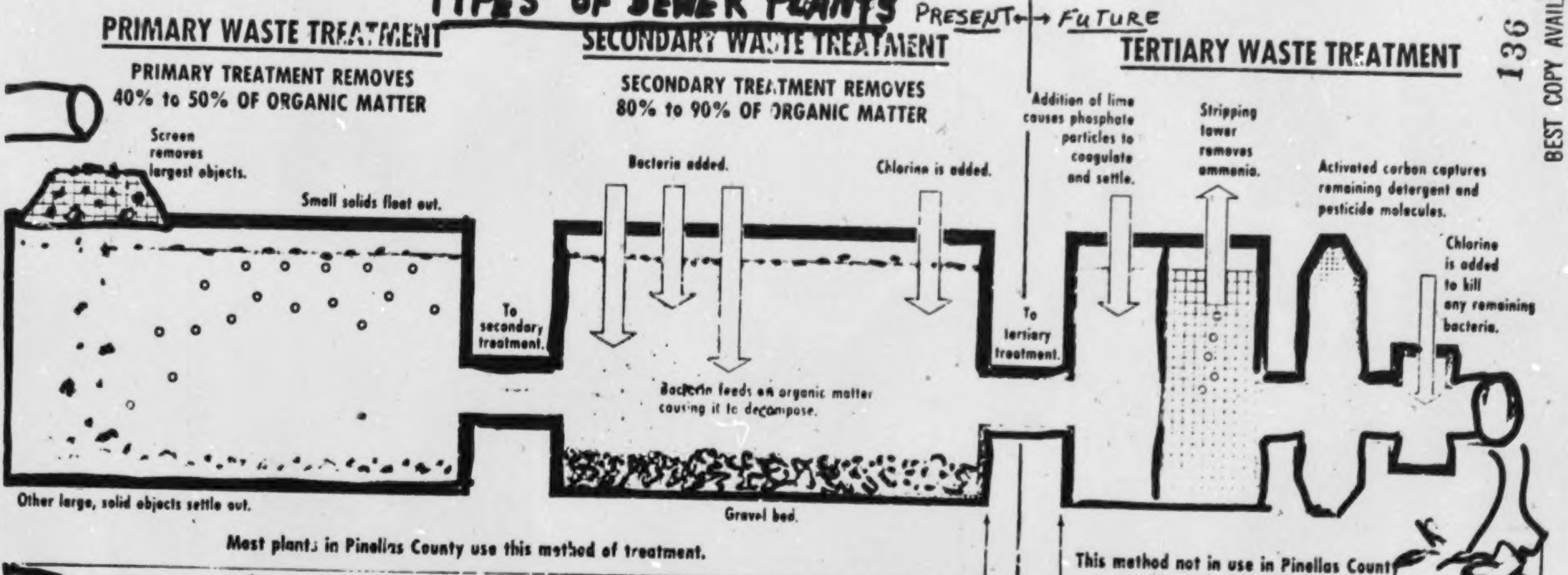
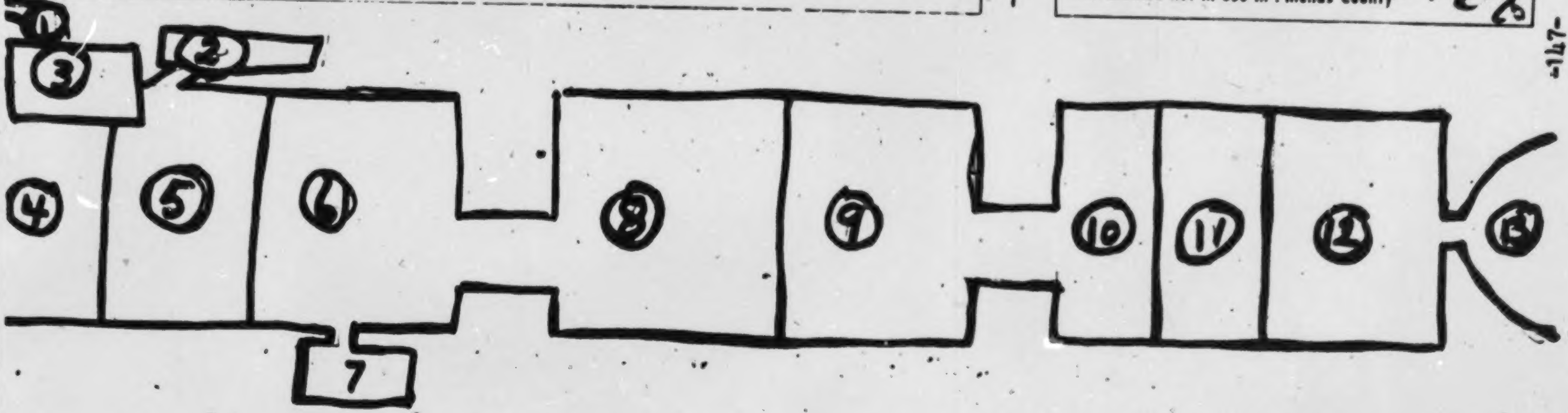
TYPES OF SEWER PLANTS


PRESENT ↔ FUTURE
PRIMARY WASTE TREATMENT
PRIMARY TREATMENT REMOVES 40% to 50% OF ORGANIC MATTER
Screen removes largest objects.
Small solids float out.
Other large, solid objects settle out.
To secondary treatment.
SECONDARY WASTE TREATMENT
SECONDARY TREATMENT REMOVES 80% to 90% OF ORGANIC MATTER
Bacteria added.
Chlorine is added.
Bacteria feeds on organic matter causing it to decompose.
Gravel bed.
To tertiary treatment.
Most plants in Pinellas County use this method of treatment.
TERTIARY WASTE TREATMENT
Addition of lime causes phosphate particles to coagulate and settle.
Stripping tower removes ammonia.
Activated carbon captures remaining detergent and pesticide molecules.
Chlorine is added to kill any remaining bacteria.
This method not in use in Pinellas County



Flow Chart tracing sewage from entry to disposal basin

WATER DISPOSAL

KEY TO FLOW CHART TRACING SEWAGE FROM ENTRY TO DISPOSAL BASIN

1. Sewage reaches the Sewage Disposal plant through a 60 inch pipe.
2. Pumping Station: Machinery that forces the sewage along the pipes in the treatment plant.
3. Screen: Sewage flows through the screen to separate large objects like woods, metals, cartons, toys, etc.
4. Aeration Contact Basic: Large paddle-wheel mechanisms churn the sewage to expose it to the air. The waste material is now called "Activated Sludge". If more and larger paddle wheels are used after the first basin the step is called Extended Aeration.
5. Bacteria Insert Basin: Anerobic bacteria is added to the sludge to begin decomposition of organic materials.
6. Clarifier: As the chemical action goes on in the sludge, small solids will float to the top and the heavier materials will drop to the bottom.
7. Tank Truck: The waste water from tank six will flow into the trucks. The waste water will be hauled away to be used as fertilizer and land fills.
8. Digester: More bacteria is added to the sludge. The sludge passes over a gravel bed called a trickling filter. This serves as an activator to speed up the action of the anerobic bacteria.
9. Secondary Clarifier: Chlorine is added. The sludge is now called treated effluent. It can be sent to a disposal basin or be piped into another treatment system for further purification.
10. Chemical Contact Chamber: Lime is added to the effluent. This causes phosphate particles to coagulate and settle to the bottom. Waste water is drained and recycled through the plant. The sludge is forced into the next chamber.
11. Stripping Tower: As the liquid flows through this chamber the ammonia gas is removed.
12. Carbon Chamber: Activated carbon is used to remove any molecular pollutanats left in the effluent.
13. Disposal Basin: A river, bay, lake or water, large area of water where the treated sewage is piped.

USES OF WATER

OBJECTIVES:

1. Student will role play persons having different views on water use and cost, and be able to write a generalization about the use and cost of water to different individuals.
2. Student will role play persons having different views on population growth as related to the water use problems, and be able to write a value judgment about the need for a population cap to meet the water crisis.

MATERIAL NEEDED:

8 character sketch cards

2 situation cards

PROCESS:

Step One: Students role-playing will read name and background of character to the group or class. Then role player will assume they are at a hearing held by the water commission. A chairman will be necessary to recognize each role player before he speaks.

Step Two: The following are roles to be played.

ARNIE PROGOLF: OWNER OF LOCAL, PLUSH, GOLF COURSE, MAKES A GREAT PROFIT - HAS BEAUTIFULLY WATERED GREENS - USES MUCH WATER FROM PUMPS TO KEEP HIS COURSE GREEN. WANTS AN UNLIMITED SUPPLY AT HIS DISPOSAL WITH NO RESTRICTIONS.

JOE WASHMAN: OWNER, OPERATOR OF A LOCAL LAUNDROMAT. JOE ALREADY HAD TO RAISE WASHERS FROM 25¢ TO 35¢ BECAUSE OF INFLATION. JOE COMPLAINS HIS PROFIT WILL BE EATEN UP IF WATER COSTS INCREASE AND BUSINESS WOULD FAIL IF HE HAD TO LIMIT SUPPLY.

MADELINE WASHMAN: HIS WIFE & PARTNER.

RICHARD WEALTH: RICH OWNS A FACTORY WHICH DUMPS WASTE INTO JOE'S CREEK. HIS HOME IS ON 5 ACRES OF WELL-WATERED LAWN WITH A POOL. HE DOES NOT MIND AN INCREASE IN RESIDENTIAL WATER COSTS - HE CAN WELL AFFORD IT! HE ALSO WANTS NO RESTRICTIONS ON INDUSTRIAL USES.

MIKE MIDDLEMAN: AN AVERAGE CITIZEN, WORRIED ABOUT RISING COSTS OF HIS BASIC NEEDS - ELECTRICITY, PHONE, FOOD AND NOW WATER. MIKE WOULD NOT MIND HIS USE BEING RESTRICTED TO KEEP THE COST DOWN - BUT FEELS INDUSTRY SHOULD BEAR MUCH OF THE COST - AND CLEAN THEIR WATER BEFORE DISPOSING OF IT.

PAUL POORMAN: PAUL IS OUT OF WORK RIGHT NOW, AND WOULD LIKE TO FISH IN JOE'S CREEK FOR HIS DINNER. BUT HE CAN'T BECAUSE THE CREEK IS POLLUTED. HE CAN'T AFFORD ANY INCREASE IN WATER BILLS - HIS WELFARE CHECK WON'T COVER IT. HE WOULD LIKE TO WORK BUT THE CONSTRUCTION BUSINESS IS SLOW, AND HE IS NOT TRAINED FOR ANYTHING ELSE.

RITA RETIRED: RITA HAS A FIXED INCOME AND ALREADY HAS DIFFICULTY WITH HER FOOD COST AND ELECTRICITY RISING. WATER IS A BASIC NEED BUT SHE WOULD LIKE TO PAY AS LITTLE AS POSSIBLE FOR IT. SHE IS WILLING TO USE IT ONLY DURING CERTAIN HOURS OF THE DAY OR ANYTHING TO KEEP COST DOWN.

HILDA HIGHRISE: HILDA LIVES ON THE 15th FLOOR OF A NEW CONDOMINIUM. SHE IS CONCERNED ABOUT WATER BECAUSE AT CERTAIN TIMES SHE WAS UNABLE TO GET WATER FROM HER TAP OR FLUSH HER TOILET. SHE WOULD NOT MIND PAYING MORE FOR WATER IF SHE COULD GET MORE PRESSURE.

Situation #1

STUDENT DISCUSSION LEADER:

HAS THOSE ROLE-PLAYING ARRANGED IN A SEMI-CIRCLE AND GIVE THEIR NAMES AND BACKGROUND - THOSE ROLE PLAYING WOULD THEN TELL CLASS HOW THEY FEEL ABOUT INCREASE IN WATER COST WHICH IS IN PLANNING STAGE AND ARGUE FOR THEIR POINT OF VIEW.

Situation #2

STUDENT DISCUSSION LEADER:

ASKS EACH ROLE PLAYER HOW HE FEELS ABOUT LIMITING THE POPULATION IN THIS COUNTY SO THAT NO MORE WATER THAN USED NOW WOULD BE CONSUMED. (KEEP IN MIND THAT WOULD VIRTUALLY STOP CONSTRUCTION, KEEP INDUSTRY FROM GROWING, STOP POTENTIAL CUSTOMERS FROM MOVING HERE.)

Step Three: On notebook paper write Generalization #1, a generalization about the use and cost of water to different individuals.

Step Four: On notebook paper write Value Judgment #1 about the need or lack of need for a population cap, and support this with 3 reasons.

Step Five: Have each person in the class or group read their generalization and value judgment out loud to the group and ask group to comment on the validity of the generalization.

POPULATION "CAP"

To summarize the unit on "Land Use" let us consider the issue that encompasses each segment we have studied - Beach development; water and waste; zoning, and transportation - this is the mega-issue of "Population Cap".

The explosive growth rate of Pinellas County has reached a point that demands attention - more than that it demands Action!

Is the population "Cap" the answer?

First define the following terms:

1. Population cap
2. Population density
3. Saturation
4. Impact fee
5. Exclusionary
6. Metropolitan
7. Municipality
8. Consolidation
9. Moratorium
10. Census

There are many ways to "cap" population for instance:

1. Boca Raton - first city in U. S. to impose a legal limit on city population, 100,000 - a moratorium on all building permits is in effect.

   Who considers this to be a justifiable means to control population growth?

A class discussion follows, with the teacher finishing with the actual court decision of January, 1974 that this was illegal as in-sufficient documented ecological evidence was presented to further exclude growth.

2. Impact fees - As this is a comparatively new idea, there are many questions which come to mind.

   What do you think the amount of the Impact fee should be?

   Who should be charged? Those moving from one dwelling to another or should this fee be shared equally by all (inclusive of a person who rents).

3. Merrett Stierheim - County Admin. has stated that controlled growth through a building moratorium is "A quality of life, depending on the ability to determine future growth".

   Do you agree?

   Does the "quality of life" depending on the ability "to Control"? Would the use of Controls on the local, county, state and federal level infringe upon the exercise of American Democracy?

"We are blundering into a population distribution pattern which is unwanted by the majority of Americans." James Rummonds, a member of the Commission on Population Growth and the American Future stated: yet, 55% of the money paid into

Campaign of successful candidates comes from:

a) Contractors
b) Realtors
c) Building Suppliers
d) Developers
e) Apartment Managers
f) Trailer Park Owners

How do you suppose these people will vote on a "Controlled Growth" or Zoning for low density housing?

How do you think the power of the politicans "financial backers" could be "Counter balanced"?

Do you feel then, that a Population "cap" is justified or unjustifiable?

Can an area constitutionally put up or enforce exclusionary stipulations due to limited carrying capacity?

NOTE: 1. The teacher could suggest the leading of the fifth amendment as a basis for consideration of this issue.

STUDENT SELF-DIRECTED STUDY IDEAS:

The following are activities which students can use to follow-up this unit of study. Some optional activities are also given at the end of each sub-division.

1. Student will receive national recognition for their concern about the environment and improving the environment.

   PRESIDENTIAL ENVIRONMENTAL MERIT AWARDS PROGRAM (PEMAP)

   For details see your subject matter supervisor or write:
   Steve Wollard
   2104 Ramblewood Court
   Brandon, Florida 33511 (813-685-4969)

   These awards are given by a panel in school which votes on projects.
   Applications for the awards must be sent in four weeks before award presentation to give PEMAP time to mail you the official reward or award!

2. Contact Disneyworld in Orlando, Florida and ask for information on the "ideal" community they intended to build for employees. Or design you own "ideal" community, using any materials you choose - wood, paper, paper mache, clay, etc.

3. Use a bucket of water and paper cups to dramatize the water use and disposal problem. Each paper cup = 160 gallons

   Each paper cup - 1 person per day use of water

   Have student take water from bucket and some will be left without any. Have students pour a cup of water (waste into bucket and plan for the bucket to get full before all cups are emptied. (simple illustration of shortage of water and fullness of sewage plants.)

POST-TEST

THE FOLLOWING QUESTIONS HAVE BEEN DESIGNED TO BE IMPLEMENTED AS A POST-TEST FOR THE UNIT. THE QUESTIONS HAVE BEEN DIVIDED INTO THREE PARTS, EACH OF WHICH DEALS WITH A SUB-UNIT (BEACH DEVELOPMENT IS NOT INCLUDED). THE TEACHER MAY ELECT TO OMIT THOSE QUESTIONS WHICH DO NOT APPLY TO HIS INSTRUCTIONAL FORMAT. ALL QUESTIONS ARE MULTIPLE CHOICE. AN ANSWER KEY IS PROVIDED AT THE END OF THE TEST.

PART I: WATER-WASTE

1. A city sewage disposal system uses the following:
   a. collects sewage and pipes it into a discharge basin, such as a river or a bay
   b. collects sewage, filters and aerates it before piping to a discharge basin
   c. collects sewages, filters, aerates, decomposes disinfects and pipes to discharge basin
   d. all of the above
   e. none of the above

2. The treated effluent from a city sewage system can be used as:
   a. discharge liquid into a receiving basin
   b. agricultural sprays and irrigation water
   c. land fills
   d. none of the above
   e. all of the above

3. A problem with water in Pinellas County is:
   a. salt water intrusion around the coastal areas
   b. there is not enough clean water available to meet the needs of the population
   c. it must use water from other counties to meet its needs
   d. all of the above
   e. none of the above

4. In the 1920's all of St. Petersburg's water supply came from:
   a. St. Petersburg
   b. Clearwater
   c. Hillsborough County
   d. Pasco County
   e. all of the above
   f. none of the above

5. The two water systems that supply Pinellas County with water are:
   a. City of St. Petersburg and City of Clearwater Water Systems
   b. City of Clearwater and Pasco County Water Systems
   c. City of St. Petersburg and Pinellas County Water Systems
   d. Tarpon Springs and Hillsborough County Water Systems

6. The four processes used by one of the water systems that supplies water to this county are:
   a. chlorination, filtration, nitration, and calcification
   b. aeration, softening, filtration and chlorination
   c. aeration, nitration, calcification, and chlorination
   d. aeration, nitration, filtration, and softening

7. The chemical that is added to the water during the water purification process in order to eliminate any bacteria picked up in treatment or pumping is:
   a. chlorine
   b. lime
   c. carbon dioxide
   d. hydrochloric acid

8. The pressure in the pipes of the water system tends to fall off as the distance from the pumping stations increases due to:
   a. leaks in the pipes
   b. salt water intrusion in the pipes
   c. too many people using water
   d. friction in the pipes

9. The water pressure is kept fairly constant throughout the water system by:
   a. high pressure gas
   b. high water towers
   c. lubrication to prevent friction
   d. inertia pumps

10. The cross-over pipelines that link the water sytems that supply water to Pinellas County together are called:
    a. direct contact pipes
    b. system connectors
    c. interties
    d. line contacts

11. "Salt water intrusion" in Pinellas County means:
    a. saltwater creeps into the rivers and lakes
    b. the underground fresh water supply is being invaded by salt water
    c. so many people want to fish in the Gulf that they are intruding upon each other
    d. there are so many fish in the Gulf that they are intruding upon each other

12. "Watercycle", or "Hydrological cycle", refers to:
    a. a special bike run on water
    b. evaporation; precipitation
    c. water flowing into the ocean
    d. the cycle of water from reservoir to faucet

13. A "Watershed " is:
    a. an area of land from which all precipitation drains to a specific watercourse or outlet
    b. an area of land with huge sheds made of wood to hold rainfall
    c. an area that sheds water into the ocean only
    d. a large man-made hole, dug to catch water

PART II: ZONING

14. "To zone" means:
    a. to sound out a word
    b. to decide how much to pay for an item
    c. to limit an area to particular use or purpose
    d. to say when a person may run for public office

15. Residential areas would include:
    a. houses and apartments
    b. houses and small stores
    c. unused beaches
    d. apartments and bowling alleys

16. When a block of houses is taken over by the government in order to make way for a new highway, this power of the government is called:
    a. commercial building
    b. megapolis
    c. urban power
    d. eminent domain

17. Municipal zoning boards are usually composed of:
    a. a group of experts in city planning
    b. a group appointed by the Governor
    c. a group of local citizens, usually appointed by city government
    d. a group of local citizens who have passed a zoning qualification

18. Which of the following statements BEST describes zoning laws?
    a. zoning laws are the same all over the United States
    b. zoning laws change as people's attitudes about their environment changes
    c. zoning laws are the same as they were 100 years ago
    d. zoning laws don'g protect us from our fears

19. Your city has only one lake. The best use of that lake for the ENTIRE community would be to:
    a. fill in and use it as the location for the new football field
    b. stock it for fishing
    c. incorporate it into your city park program
    d. sell it to a developer who wants a new lakefront subdivision

20. Which one of these is NOT a reason why high population density areas develop?
    a. ethnic or income minority groups are forced to live in a certain area
    b. the high cost of land causes developers to build as many units as possible in a given area
    c. people want to live near to business and shopping areas
    d. most planning boards have planned their community in this way

PART III: TRANSPORTATION

21. Which of the following statements is a characteristic of ALL roads?
    a. all roads have four lanes
    b. all roads allow high-speed travel
    c. all roads are constructed to meet certain needs
    d. all roads are built by the Federal Government

22. Which of the following statements does not apply to Interstate Highways?
    a. minimum speed limits
    b. can be used to travel long distances
    c. have four or more lanes
    d. stop lights and stop signs are found frequently

23. Which of the following types of vehicles would most likely be found travelling on a downtown city street during weekdays?
    a. private automobiles owned by working people and shoppers
    b. city buses
    c. delivery trucks
    d. all of the above

24. Automobile sales in Pinellas County have:
    a. contributed to traffic congestion on our roads
    b. not had much effect on traffic congestion
    c. have contributed to reducing traffic congestion
    d. had no effect on traffic conditions

25. Vehicle registration statistics can best be used to show:
    a. how many tourists drive on Pinellas County roads
    b. how many vehicles are owned in Pinellas County
    c. how many vehicles can be found on the highways at any given time
    d. none of the above

26. In deciding upon the size, location, and direction of a new expressway, which of the following deserves the LEAST consideration?
    a. community needs
    b. political campaign contributions
    c. cost
    d. community reaction

27. Which of the following would probably have the least amount of influence in deciding where a new expressway would be located?
    a. American Automobile Association
    b. Pinellas County Association of Realtors
    c. individual private citizens
    d. an Environmental Planning Commission

28. In order to build a new expressway, it will be necessary to tear down hundreds of private residences which lie in the path of the expressway. The owners of these residences should:
    a. have no voice in the matter
    b. be ordered to leave their homes immediately
    c. be paid a fair market value for their property
    d. not be paid for the loss of their property

29. Which of the following statements is true?
    a. individual needs are always considered more important than the needs of the whole community
    b. community needs must be considered in relation to the needs of the individual
    c. it is very easy to decide whether community needs are more important than individual needs
    d. community needs are always more important than those of individuals

30. Which of the following levels of government would most likey determine where new city streets should be built?
    a. the City Council
    b. the County Commission
    c. State Department of Transportation
    d. Federal Department of Transportation

31. The City Council is considering free bus transportation as a means of reducing downtown automobile traffic. Which of the following would probably be most opposed to this plan?
    a. downtown merchants
    b. retirees
    c. environmentalists
    d. taxicab companies

32. What do you see as a more efficient transportation system for metropolitan areas?
    a. private automobiles
    b. mass transportation
    c. helicopter service
    d. bicycles

33. Which of the following factors must be soncidered in planning transportation systems of the future?
    a. traffic flow
    b. travel desires
    c. alternatives to automobile transportation
    d. all of the above

34. When planning a transportation system for the future:
    a. automobiles must be eliminated because of air pollution
    b. no more highways should be constructed
    c. the quality of the environment must be considered
    d. there must be a total elimination of all present means of transportation

35. Which of the following has contributed toward major problems in intelligent land use in Pinellas County?
    a. population explosion
    b. inadequate planning for future needs
    c. lank of cooperation among communities involved
    d. all statements are true

36. In the event of a severe hurricane in Pinellas County, which of the following would NOT likely occur on the beaches?
    a. widespread concern
    b. clogged evacuation route
    c. heavy residential flood damage
    d. 24-hour early evacuation by most beach residents

POST-TEST KEY

PART I

1. C
2. E
3. C
4. A
5. C
6. B
7. A
8. D
9. B
10. C
11. B
12. B
13. A

PART II

14. C
15. A
16. D
17. C
18. B
19. C
20. D

PART III

21. C
22. D
23. D
24. A
25. B
26. B
27. C
28. C
29. B
30. A
31. D
32. B
33. D
34. C
35. D
36. D